

# **Re-imagining sustainable food planning, building resourcefulness: food movements, insurgent planning and heterodox economics: Proceedings of the 8th Annual Conference AESOP Sustainable Food Planning group**

**Tornaghi, C**

**Published PDF deposited in Coventry University's Repository**

**Original citation:**

Tornaghi, C (ed.) 2018, Re-imagining sustainable food planning, building resourcefulness: food movements, insurgent planning and heterodox economics: Proceedings of the 8th Annual Conference AESOP Sustainable Food Planning group. Coventry University.

ISBN 978-1-84600-082-9

Publisher: Coventry University

**Copyright © and Moral Rights are retained by the author(s) and/ or other copyright owners. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This item cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder(s). The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holders.**

# Re-imagining sustainable food planning, building resourcefulness: food movements, insurgent planning and heterodox economics

**Conference proceeding of the:**  
8th Annual Conference of the AESOP  
Sustainable Food Planning group

**Date: 14-15 November**  
Coventry University Technocentre,  
Technology Park, Puma Way,  
Coventry CV1 2TT



**Re-imagining sustainable food planning, building resourcefulness: food movements, insurgent planning and heterodox economics - Proceedings of the 8th Annual Conference of the AESOP Sustainable Food Planning group.**

Published by Coventry University, Coventry, UK on the 8<sup>th</sup> March 2018.  
ISBN: 978-1-84600-082-9

© The authors, the editor (Chiara Tornaghi) and Coventry University  
The moral rights of the authors and copyright holders have been asserted.

You may share this work for non-commercial purposes only, provided you give attribution to the authors and copyright holder.

**Acknowledgements:**

The editor wishes to thank Joanne Noone and Josh Elliott, from the Operation Team at the Centre for Agroecology, Water and Resilience (CAWR), Coventry University for their editorial work in bringing these proceedings together. She also wishes to thank all the authors of this collection, who have provided their short chapters timely during the summer months (2017) ahead of the conference.

**How to cite this publication:**

TORNAGHI Chiara (editor) (2018), *Re-imagining sustainable food planning, building resourcefulness: food movements, insurgent planning and heterodox economics. Proceedings of the 8th Annual Conference AESOP Sustainable Food Planning group*. Coventry: Coventry University.

**Re-imagining sustainable food planning, building  
resourcefulness: food movements, insurgent planning and  
heterodox economics  
Proceedings of the 8<sup>th</sup> Annual Conference of the  
AESOP Sustainable Food Planning group**

**Edited by Chiara Tornaghi**

**Coventry: Coventry University**



## Introduction

This book is a collection of draft papers of approximately a third of the conference papers presented at the 8<sup>th</sup> Annual Conference of The Sustainable Food Planning group, held at Coventry University, on the 14-15 November 2017.

After seventeen years from its early conceptualisation, and ten years on from its institutionalisation (Van der Valk and Viljoen 2014), sustainable food planning is a thriving transdisciplinary research and policy field bringing together policy makers, academics, and practitioners across the globe. Food charters, food strategies and food policy councils have multiplied, 'alternative food networks' have gained significant and growing shares of the food market and new forms of localisation of food production, including urban agriculture, are gaining ground and becoming central components of new food policy strategies.

Yet, the scale and speed of the 'food' crisis make us see these achievements as modest and utterly inadequate. Urban food poverty and malnutrition, and the related use of food banks, are on the rise even in some of the wealthiest countries of the world; the most vulnerable populations in both the global North and South are unshielded by austerity politics, food-commodity speculation, land grabbing or staple food price rises. Diet-related diseases (such as diabetes and obesity) are growing at alarming rates among children in the supposedly 'well-fed' countries of the world. We still waste between 30% and 50% of the food we produce while millions of farmers and land workers growing our food across the globe are struggling to make a living. And the environmental impacts of our food 'regime' and diets are devastating.

Planning for sustainable food production and food provision is more than ever urging us to look for more effective, equitable and just approaches that radically change not only the way we grow food, but the very core of our living space.

This 8<sup>th</sup> annual conference of the AESOP sustainable food planning group was dedicated to discussing ideas, approaches and practices that can help to re-invent food planning in light of the need to build *a resourceful, agroecological, urbanism*. Inspired by a seminal paper from Derickson and MacKinnon (2013), we use the term 'resourceful' as a particular way of intending the concept of 'resilience': an urbanism that creates the conditions for its inhabitants to control the means of their social reproduction, to have a say on, or directly control, the resources for their own survival; a space where land, water and nutrients serve the needs of the people (rather than profit), while respecting the ecosystem. A 'resourceful' urbanism creates living conditions that enable people to be resilient while at the same time challenging the root causes of the crisis that require us to look for resilience.

With 'agroecological' we explicitly refer to practices aligned to 'peasant agroecology' and the agroecology movement: a way of cultivating the soil, managing ecological relations and disposing of the produce that respects the environment and is based on cultural and social arrangements inspired by solidarity and mutuality.

By 'urbanism' we refer to more than just buildings, zoning or planning. We refer to ensembles of the built environment and its regulation, the material infrastructure and the collective arrangements (for food provision, waste collection, land management, urban design, housing, energy and so forth) that are in place and to which we are all subjected. We include the urban, the peri-urban and the rural realm, and reflect on their mutual interconnections and dependencies.

While food has entered the planning agenda more than a decade ago, a resourceful and agroecological *urbanism* – which is more than closing metabolic loops through urban agriculture – is yet to be fully articulated (for a research and action agenda on this, see C.M Deh-Tor's article, in the RUAF Urban Agriculture Magazine No. 33, 2017). An urbanism in which food is not the latest 'fix' to be added as a new way to market, but rather a key and long forgotten component around which new and just social arrangements, ecological practices and ways of life must be reinvented.

The presentations were organized in six main tracks:

#### TRACK 1 – AGROECOLOGICAL URBANISM

This track included contributions that addressed theoretical re-conceptualisations of urbanism (and its peri-urban and rural surroundings) in relation to food planning. This included also discussions on the interlink between new and old urban and agrarian questions; critical discussions on planetary urbanisation, post-suburbia, insurgent urbanism; new ontological and epistemological definitions of urbanism; and the relation between daily experiences and urbanism.

#### TRACK 2 – POLITICAL PROCESSES

This track collected contributions focused on political processes and strategies, including pathways for radicalising and/or steering local, national or global agri-food strategies; experiences of people's led urban food policies and planning; justice and rights-based legal challenges; urban-based food, water and land access movements; experiences linking agrarian and urban food sovereignty movements; community self-organisation.

#### TRACK 3 – RESOURCEFUL LAND MANAGEMENT

This track included, for example, contributions that discussed land reforms and land tax; common good land use; regulation or incentives that turns urban vacant spaces into food producing sites; regulation of private property rights in relation to land depletion and environmental degradation; innovative waste and nutrients management in urban areas; land and water rights; urban metabolism; innovative and radical ways to reshape urban-rural links.

#### TRACK 4 – AGROECOLOGICAL PRACTICES

This track included contributions focused on a number of agroecological practices, including for example experiences that experiment with food producing and socio-environmentally just urban agriculture, urban agroforestry, urban permaculture, organic indoor production, rooftop and vertical growing, edible public space; foraging-enabling urban planning and design; urban water management; etc.

#### TRACK 5 – POST-CAPITALIST ECONOMICS

In this track we have included contributions that discuss post-capitalist economics, including food de-commodification, solidarity and shared economy, micro-farming, urban patchwork farms, community kitchens, food commoning and conviviality, alternative currencies, new urban commons sharing food, housing, and livelihoods, etc.

#### TRACK M – ALTERNATIVE METHODOLOGIES

This track was created after the call for paper, and collected a number of contributions with the potential to contribute to the reflexivity of scholars and activist (and their various hybrids), help re-positioning, de-colonising and generating novel approaches to food planning. They include provocative contributions around the role and transformative power of the performing arts, videos/films, sensory approaches, taste/smell, and deeper visceral/bodily interconnections with nature, the soil, and food.

On behalf of the conference organising team, I hope you will find this book useful.

Chiara Tornaghi (book editor, conference host and group Chair)  
Coventry, 21<sup>st</sup> December 2017

<b>Introduction .....</b>	<b>3</b>
<b>The foster metropolis as a figure of the urban food planning renewal towards a resourceful and agroecological urbanism .....</b>	<b>9</b>
Caroline Brand	
<b>Sustainable Urban Food Districts (SUFD): Strategical spatial planning in Urban Food systems. An analysis to the Toronto Food Strategy Policy .....</b>	<b>17</b>
Sebastian Felipe Burgos Guerrero	
<b>Urban futures and food production .....</b>	<b>26</b>
Silvio Caputo	
<b>Political agroecology in Crete.....</b>	<b>33</b>
Kostantinos Christodoulidis	
<b>Access to land pivotal in the food system reconfiguration - The case of the Rome peri-urban area .....</b>	<b>44</b>
Luca Colombo, Stefano Grando	
<b>The potential impact of urban agriculture on food production, water management and energy consumption: the case of Padua.....</b>	<b>49</b>
Michele Dalla Fontana, Denis Maragno, Giulia Lucertini, Sarah Stempfle, Matelda Reho, Francesco Musco	
<b>Development of an urban agriculture project: "projection" and "revelation" .....</b>	<b>56</b>
Anne-Cécile Daniel, Mélanie Colle, Christine Aubry	
<b>Planning urban food together. Theoretical approaches to urban food planning practice in a complex, pluralistic society. ....</b>	<b>66</b>
Paul de Graaf	
<b>Transformations and innovation in the Veneto region agro-food system.....</b>	<b>72</b>
Marta De Marchi	
<b>Trends in urban food strategies .....</b>	<b>79</b>
Rosalia Filippini, Chiara Mazzocchi, Stefano Corsi	
<b>Post-productive Ruralscape: The Role of the Food Market, the Ter Brugent Case, Catalonia.....</b>	<b>89</b>
Romà Garrido y Puig, Marta Carrasco Bonet, Nadia Fava	
<b>Urban Food Strategies: the role of Food Champions and policy entrepreneurship in Cork and Bergamo.....</b>	<b>96</b>
Gloria Giambartolomei, Francesca Forno, Colin Sage	
<b>Shared urban gardens for transition towards democratic and ecological cities .....</b>	<b>105</b>
Sandrine Glatron, Victoria Sachsé, Beatrice Del Monte	
<b>Pathways for enabling local food policies: the role of people's participation .....</b>	<b>112</b>
Jess Halliday & Corinna Hawkes	
<b>The role of planning in shaping better urban-rural relationships in Bristol City Region.....</b>	<b>117</b>
Luca Lazzarini	



<b>The challenge of land accessibility for Urban Agriculture. A Hybrid Governance Approach on the Brussels' case.....</b>	<b>123</b>
Alessandra Manganelli	
<b>(Re)defining viability through agroecological practices : The case of urban market gardeners in Brussels.....</b>	<b>134</b>
Noémie Maughan, Nathalie Pipart, Barbara Van Dyck , Marjolein Visser	
<b>Participation in Alternative Food Networks (AFNs): a resource for territorial resilience. The Territorial Agricultural Resilience Index (TARI) for planning .....</b>	<b>145</b>
Chiara Mazzocchi, Rosalia Filippini, Stefano Corsi,	
<b>Corporeal Encounters with farmscapes - curating an embodied methodology for ecological urban-making.....</b>	<b>153</b>
Anna Maria Orrù	
<b>The Turin food System toward a Metropolitan Food Policy: An Actorial Perspective.....</b>	<b>167</b>
Giacomo Pettenati, Egidio Dansero, Alessia Toldo	
<b>Food Planning for Organic urban Agroculture in Southern Africa's Cities. Sustainable Urban Food Systems with urbanGAPs for Horticulture Production .....</b>	<b>176</b>
Nicole Paganini, Anja Schelchen	
<b>Sustainable Food Production in a Food Deficit Region: The case of Kudumbashree as a Community Self Organisation in Kerala, India .....</b>	<b>180</b>
Christabell P J	
<b>Urban agroecology: An exploration of gendered information pathways and place-making .....</b>	<b>185</b>
Megan L. Resler and Sophia E. Hagolani-Albov	
<b>Creating the “Healing City”: Lessons learned from care farms in three European countries.....</b>	<b>194</b>
Magda Rich, Andre Viljoen, Helen Smith	
<b>Individuals cultivating edible plants on buildings in England .....</b>	<b>205</b>
Mina Samangoeei	
<b>The Weekend Food Odyssey: Perceptions of Accessibility to Food Outlets .....</b>	<b>215</b>
Christian Kelly Scott, Kathryn Colosanti, and Courtney Pinard	
<b>Alleviating tourist pressure on city centres by fostering alternative food experiences away from tourist hotspots .....</b>	<b>224</b>
Helena Solman, Arnold van der Valk, Bas Pedrolí	
<b>Liberty or Lunacy? Exploring Framings of Self-reliance in Foodscapes.....</b>	<b>232</b>
Stephanie Nuria Spijker,	
<b>Redesigning food systems for economic, social, and ecological benefit in Chiapas, Mexico .....</b>	<b>237</b>
Emilio Travieso	
<b>A food perspective on urban green space .....</b>	<b>243</b>
Noel Van Dooren	

**The emerging practice of food forest – a promise for a sustainable urban food system?... 247**

Noel Van Dooren

**The transformative potential of agroecological farmers: an analysis of food system strategies developed through participatory processes in Nicaragua and the UK ..... 251**

Elise Wach, Santiago Ripoll, Chris Smaje, Jorge Irán Vásquez Zeledón, Clare Ferguson, and Julio Hector Sanchez Gutierrez

**Urban Greening via Urban Agriculture to Urban Agritecture - A Comparative study between New York and Shanghai ..... 258**

Hemeng Zhou

# The foster metropolis as a figure of the urban food planning renewal towards a resourceful and agroecological urbanism

Caroline Brand

Université de Grenoble-Alpes  
carolinebrand@hotmail.fr

---

## Introduction

If the “urban century” has been the one of the disconnection of the relationships between food and cities (Bellows & Nasr, 2010: 18), the XXIst century has started by a series of questioning and the emergence of a discourse and practices that challenge this disconnection. In an era of multiple crisis (economical, social, ecological, urban), the territories re-discover this essential function. The ongoing changes show that the local authorities are to set date with this long time forgotten issue that re-emerges under new forms in the urban era.

In this context, the food issue is nested within multiples challenges (Morgan, 2009, Morgan & Sonnino, 2010) and its multidimensional character offer great opportunities to rethink the urbanization process in terms of spatial organization and governance. Researches have shown the interest to better take into account food in urban studies and they point out today that the multiplication of micro-innovations in the food sector constitute levers of innovation and transition of urban systems toward sustainability (Pothukuchi & Kaufman, 2000; Ascher, 2005; Steel, 2008; Morgan, 2009; Cohen & Ilieva, 2015). The Urban Food Planning movement (UFP) (Morgan, 2009) gather researchers and practitioners that aim to better relate urban systems and food systems in terms of innovation and transition toward sustainability. This paper aims at questioning the UFP movement in achieving these objectives and at proposing the figure of the *foster metropolis* as a way to contribute to the conceptualization of a resourceful and agroecological urbanism.

The elements developed in this paper are based on the surveys conducted during my Ph. D between 2009 and 2015. I took support from fields belonging to different status : geographical fields and fields of practical networks and common discourse. I studied the food issue emergence in the Lyons urban region in France and the Torino urban region in Italy. It was coupled with the study in Lyons of the setting up of a territorial reflection for a sustainable and accessible food system through the European Urbact program “sustainable food in urban communities”<sup>1</sup>. I took part in this program as a local expert. These two complementary surveys consisted mainly in enquiries mixing analysis of the grey literature, participating observation and interviews. Through two structuring networks of the UFP movement, APA in North America, AESOP in Europe, I followed the emergence of food in the agenda of the Anglo Saxon territories. In a more epistemological view, I also analyzed how an emerging knowledge was structured on this question. I made a bibliographical analysis coupled with the participating observation of researcher meetings, as well as 4 interviews with the latter. The paper will also integrate the analysis of professional trainings I conducted on the thematic of “local food strategy” between 2014 and 2015 for the peri-urban and rural territories of the Rhône-Alpes Region applying for the 2014-2020 LEADER program.

To start with, this paper will go through the argued limits of today UFP in terms of contribution to sustainable food systems and urban systems. Then, we will develop the case of the lyonese urban region. Based on the analysis of the Urbact “sustainable food in urban communities” (2013-2015), we will show the way Lyon has overcome the cited limits of today UFP and has taken the direction toward the figure of the *foster metropolis* that, we argue, opens a path for the real contribution of to a resilient urbanism. To finish, based on the cases of Lyon, Torino and the LEADER training sessions we will present the opportunities of the figure of the *foster metropolis* for sustainable urban systems in terms of governance and spatial organization. We argue that it allows a *territorial transaction* that is a key for a transition of

---

<sup>1</sup> Urbact is a programme of communitary initiative of the economic, social and territorial cohesion policy of the European Union. The thematic network « sustainable food in urban communities » is part of the thematic « environment with low carbon impact » of Urbact II (2007-2013). It groups 10 cities (Brussels, Amersfoort, Bristol, Olso, Göteborg, Ourense, Lyon, Messina, Athens, Vaslui) wishing to reflect and conduct actions for more sustainable urban food system. Between 2013 and 2015 I accompanied the city of Lyon in this programme on an expert, support and capitalisation mission. Monitoring this programme was a support for analyzing the rising territorial seizing of food at local authorities scale.

UFP toward a resourceful and agroecological urbanism based on a better transversality and coherence between actors, themes and scales of action and interterritoriality between spaces (Vanier, 2008).

### Limits of today *Urban Food Planning* toward a resourceful and agroecological urbanism

The UFP movement (Morgan, 2009) aims at investigating the way planners and urban actors can help in building up more sustainable food systems and the way the food issue can become a prism through which urban development can be rethought (Figure 1). The territories constitute experimentation laboratory to answer the global issues in which the *food equation* is nested (Morgan, 2009, Morgan & Sonnino, 2010).

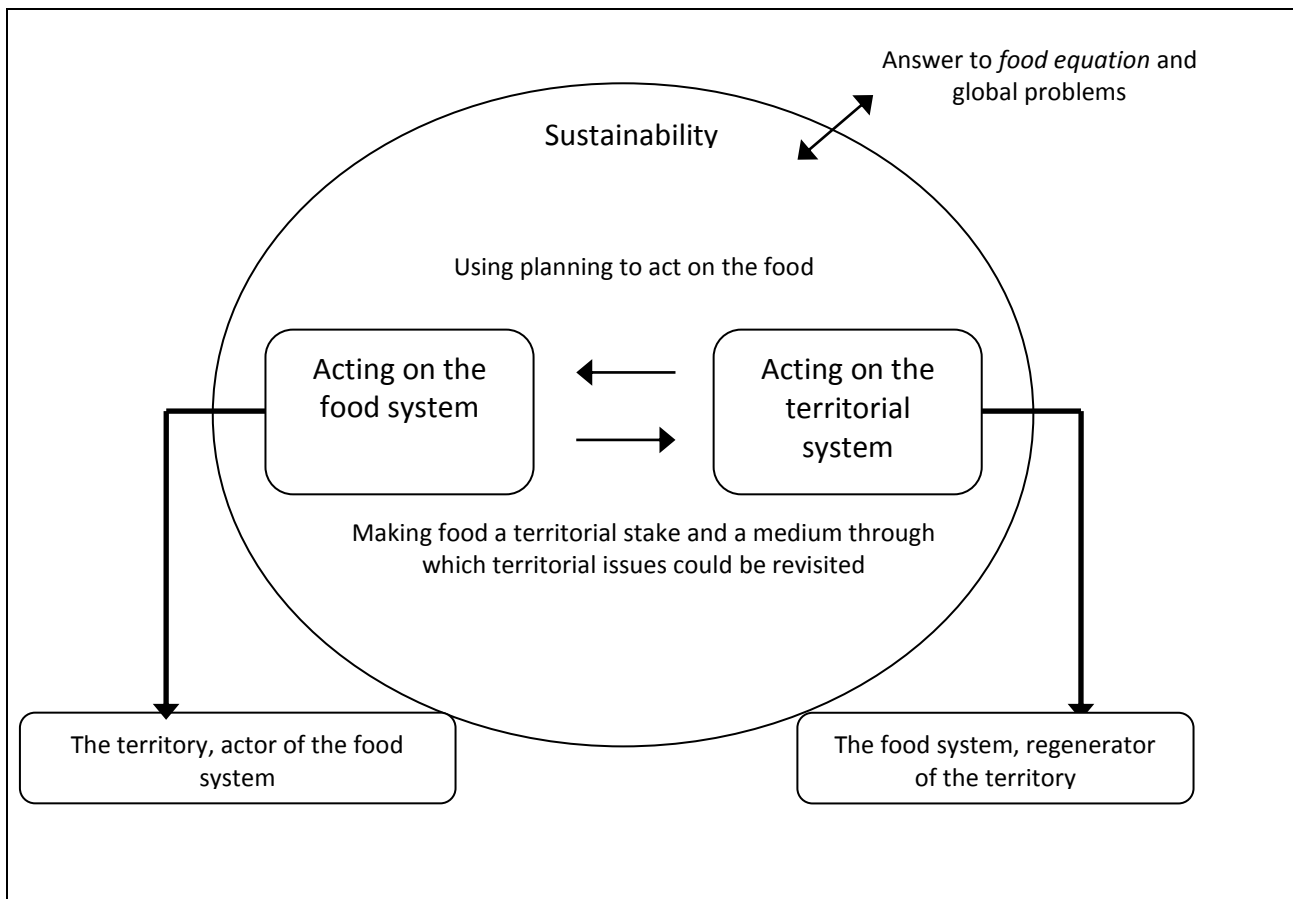


Figure 1. Urban Food Planning : between sustainability, food system and urban system (source: Brand, 2015).

This field of research and practice is developed within a network of North American researchers (planners and specialists of food systems) (APA) since the years 2000 and Northern European researchers (AESOP) since 2009, geographical contexts where cracks in the food system are prominent. The reflection gets structured with some particularities linked to geographical contexts and leading researchers. Within the APA<sup>2</sup>, the focus is on food security. It is more generally spoken of *Community and Regional Food Planning* (Pothukuchi, 2009). This approach through community food issues and the problem of accessibility is at the core of the investigation. Within the AESOP<sup>3</sup>, the approach is formalized from research centred on innovations and mutations in food systems. Within these, the problems faced by the agricultural sector have created links with the problems faced by territories. Also, cities and metropolitan

<sup>2</sup> Researchers involved come from the fields of urban and regional planning (strategic planning, urban policy, governance, decision making, participatory democracy, sustainable development, environment, ethics of planning, etc.). They arrived on this subject because of their innovative investment themes in the planning field, rather centered on people (class issues, gender, ethics, education, health, participatory democracy, social justice) (J. Kaufman, K. Pothukuchi, S. Raja, B. Born, G. Wekerle) or investment issues related to the environment or of the field of political ecology (D. Glosser, N. Cohen, G. Wekerle). There are also researchers who invest the field of urban agriculture (J. Nasr, J. Komisar, N. Cohen) and researchers from the analysis of the conventional food system, its failures and emerging alternative forms (K. A. Dahlberg, A. Blay-Palmer). Researchers' names are mentioned indicatively and not exhaustively. They are also researchers who are among the initiators of this field of research, some of whom also participate in the annual conferences of the AESOP, on the European side.

<sup>3</sup> In addition to architects, planners and geographers focus on urban and metropolitan planning (and addressing the issues of landscape, nature, urban sustainability), the researchers gathered come from research fields on the food system, its actors and its terms of regulations (*agro-food studies* and analysis of alternative food systems).



areas have emerged as new actors on the food system governance scene (through public catering for instance). In recent years, both networks have drawn closer to each other as regards the issue of food safety and of food justice. Urban sustainability is present within both networks. But, the question of participation of the planners in the construction of more sustainable and equitable food systems prevails. In the APA, the initial strong prism is that of acting on the food system: « a planning perspective can be used to better understand the local food system and address community food security objectives » (Pothukucki & Kaufman, 1999 : 221). Since its constitution in Europe, the first branch of the movement has been dominant even if the second branch is more quoted in the the scientific productions of the researchers than those of the APA. Since Almere meeting in 2009, planning is dominantly tackled as a tool to implement more sustainable food systems (Morgan, 2009; Brand, 2015). The retained definition of the “food planner” is less linked to planning issues and is formulated in a militant manner regarding the perspective of a sustainable food system<sup>4</sup>. The planning issues related to territories facing the urbanisation process remain relatively less documented apart from the urban-rural links.

Despite a vision and a discourse truly connecting food and urban phenomenon, there are still limits in the analyses and practices undertaken.

Regarding the sustainability of the food system, the limits inside the first branch of UFP reflect the initial formulation prisms, linked to socio-spatial processes under way (many analyses on urban and peri-urban agricultural dimension, major focus on food relocation movements, cultural dimensions of food and therefore the consumption dimension left a little behind (few links have been developed with *Food Studies* researchers and the practitioners in France have difficulties in integrating health and nutrition, culture, education, accessibility issues regarding consumers) just like the stages of transformation and of distribution related to the conventional system). About the latter, it is even paradoxical as few studies bear up the traditional and conventional actors in the food system (retailers, wholesalers, craftsmen, distributors, caterers, etc.) while some researchers are specialised in *agro-food studies*. S. M. Broekhof and A. Van der Valk show that the north-american and European researchers of the UFP movement or the study of food systems (but having published in a planning review) have mainly positioned themselves in favour of the alternative food discourse (2012). Even opposing the conventional and alternative model, it could prevent from imagining an eventual “third voice”, mixing the models and it could also split the treatment of the food issue into distinct governance scenes. These lacks concerning the consumer issues (the approach starts from the food “need” notion, and the food vital character but is notably centered on the agricultural scope in the end<sup>5</sup>) and the conventional and traditional food stakeholders (the alternative food chains centralize the interests) prevent the UFP movement to reach its ambitions concerning a more sustainable food system but also alleviate its potential contribution to reinvent a more sustainable urban development (tackling the levers in terms of urban planning such as logistical issues, commercial urbanism, health urban inequalities, etc.). UFP is partially still at the stage of the *locavore metropolis*, which aims at developing the local supplies in the urban regions. This stage prevents UFP to tackle concretely sustainable urbanism issues.

Regarding sustainable urbanism, the approach is mostly centred on the urban areas and leaves aside the rural areas regarding the food stake. Here again, this is paradoxical as many researchers come from analyses focused on rural space. There is also a discrepancy between the diffusion of the discourses on UFP and the reality of the practices. In the UFP movement, tackling food issue is a way to establish links between multiple siloed planning sectors : « food is an integrative concept linking different public domains and policy objectives » (Wiskerke, 2009 : 382). For UFP, food can engage the territories in a more sustainable territorial management because of its multidimensionality and inherent need of transversality to be tackled (Wiskerke & Viljoen, 2012). But, in the practice, siloes remain. In the north-american context, K. Hodgson study (2012) show that few territories explicitly refer to an ambition of acting on the food system. Food is indirectly tackled through sectorial action prisms. The setting of a red thread between various sectors is still a perspective as food planning in the practice is limited to partial

<sup>4</sup> « food planners are professionals who are striving to integrate food policy into the mainstream planning agenda » (Morgan, 2009 : 342).

<sup>5</sup> One article (Ilieva, 2012) points out the necessity to integrate the cultural dimension to the vital one in the way territories seize the food issue. She proposes the *terroir* model for seizing the food issue in the territories as a way to integrate the cultural dimension. But, surprisingly, this « *terroir*-led food system planning » (Ilieva, 2012 : 64) appears as reduced to an agricultural strategy of valorization of the quality production. The quotidian nourishing function of food disappears. The nourishing ambition carried by UFP does not appear in this *terroir* model which is more directed to the tourist than the inhabitant.

actions because of this lack of global apprehension of the topic. Because of this sectorial seizing of the food issue, the coordination between planning siloes remains. In France, the « food governance » term is used as a language component from 2008 and is strongly diffused since 2012. It is defined from the multidimensional scope of food<sup>6</sup> but for the practitioners this pioneer definition is difficult to understand and follow in the siloed environment of the local authorities. Siloes remain today in the global perception of the food issue. The « food approach », departing from the siloed glazes on the food issue, encounters the barriers of a sectorized territorial action.

### **Toward the *foster metropolis*: the path followed by the lyonese urban region**

In Lyon, food emerged on the local agenda through two acts.

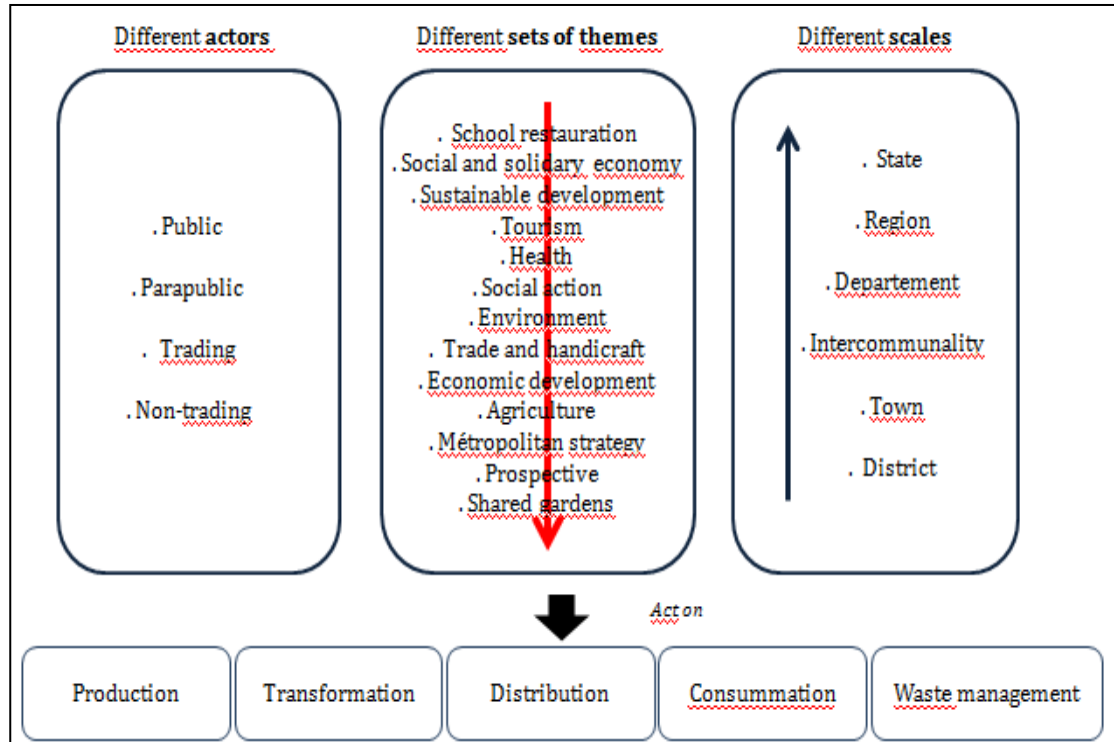
The first act of the territorialized seizing of food is that of the emergence of an awareness of action on food. In this act the treatment of food was not formulated as such. That is, within a global apprehension, or for its vital character for the functioning of the territories. Thus the actors act on the food dimensions but in distinct silos of action, meaning action sectors composed of a type of actor, a thematic and a scale of action that do not function in transversality. In this act, one of the silos outclass particularly the others in the emergence of a consciousness of action, the one of the agricultural action, led by public and parapublic actors at supra-town scale (intercommunality). The cracks of the food system and the new practices contribute to the rise of food in visibility on the agenda of the territories, while outlining new relationships between urban and rural areas. More precisely the treatment of food by the territorial authorities is being built notably in a prevailing prism which we named “agri-food”. This word was created to qualify the sliding of the silo of the agricultural action towards food. In this sliding, the agricultural action relies on the new food demands in order to consolidate the place of agriculture in the territory. Successively apprehended as land reserves, multifunctional and productive spaces, the farming land is recently taking a fostering aspect. In the periruban agricultural policies led at the intercommunal scale in the Lyons urban region. The local supply development via short food supply chains and collective catering are development levers for this silo, towards an agri-food action. This sector of action centered on production was opened to the consumers and to the means to bring into play to answer their demands. So, especially faced with the extent of the needed volumes for the collective catering, this sector of action evolves from a short food supply chains approach to an approach which aims at structuring the territory supply chains in local products. However, two limits can be expressed which put the current food treatment in an agri-food prism. On the one part, the food treatment is now reduced to the only question of the supply modalities of the territory, approached from the production sector. This approach leaves behind the treatment of the dimensions linked with the food consumption as well as the accessibility to food or the wording of answers to the sanitary state of some districts. On the other part, within this supply modalities centered approach, the alternative food chains centralize the interests. The traditional and conventional actors, however necessary to a genuine reflection on the territory food stakes, are currently little integrated. In Lyons they were identified but not really approached.

A global approach to food remains to be formulated to make it emerge as a research subject and action category. Food demands a glance shift from the action silos and research prisms. I call this glance shift a *fostering look*. It transcends the agricultural, social or cultural food approaches. This glance was first formalized with the Urbact “sustainable food in urban communities” program piloted by Lyons City. It the 2nd act of the territorialized seizing, that of the structuring of a territorial reflection around food. This program partly gathered for two years these fields of actors, themes and action scales, to conduct a reflection aiming at putting the food on the Lyons urban region agenda (Figure 2).

---

<sup>6</sup> « the food governance designates a bunch of new cooperations between various actors and scales of intervention around the common arena of the food stake » (TEV, APCA, FNCUMA, FNCIVAM & TRAME, 2009).

Figure 2. Actors, themes and scales reunited by the Urbact programme.



More precisely it gathered the sectorial scenes which, as the agricultural silo, seized and started structuring a transversal food apprehension (civile society, regionalized state food policy, sustainable development department in the Urban Region authority, public catering department and social economy department in the City of Lyon). Stimulated by a profusion of private and citizen initiatives around food, Lyons City social economy department stimulated a reflection of metropolitan ambition around food. This, from its consumption centered action sector.

This program led the Lyons urban region from the stage of the *locavore metropolis*, which aims at developing the local supplies, toward the stage of the *foster metropolis* that goes beyond the only supply issue. It apprehends food in its multidimensionality and of its vital character for the territory good functioning.

Three elements of this program are interesting in relation with the development of a local action upon food.

The durability and accessibility stake of the food system induced a reflection going from the production to the waste management. This scene then crossed the problematic of accessibility, quality and sustainability of food with the territorial problematic of agricultural management, social action, public health, public spaces management, economical development, etc.. It developed a global approach to food.

Through this crossing, it de-sectored actors, themes and action scales intervening upon some food dimensions, as we have seen before. It gathered local authorities actors and representatives or actors of the food system, involved in the processes of sustainable food, accessible and of good quality. It has brought some inter-knowledge between them. Actors from different silos have thus discussed together about a topic that linked them and have learnt from other silos action rationale, inside and outside the structures.

Embryos of transversalities and synergies between action themes have been observed. For instance, sectorial diagnoses were shared. This allowed to identify sectors of priority action by crossing datas from Lyons City health observatory with datas coming from the enquiry on the household buying compartments conducted by the trade and commerce chamber.

From this cooperation, the food governance took shape within an inter-territoriality. That is to say an orchestration work of a necessarily plural legitimacy. A local sustainable food council, articulating different thematic actors and scales of intervention was recognized by the City and Metropole of Lyons in 2015.

Finally, the approach developed allowed to pass over an approach limited to the sole short food supply chains. The reflection was centered on the structuring of a sustainable food chain. Within the program time it was limited to a reflection of a structuring of the alternative food chain. But, the ambition to create links with more conventional actors was present from the very beginning of the program. At the end of it, the perspective is shared by the actors of the alternative system. At the start they were opposed to this opening.

In the Lyon urban region, the Urbact program has allowed to pass over the limits described in the first part. Thus, the *territorial transaction*, allowed by the figure of the *foster metropolis*, opens interesting perspectives in terms of transition of UFP toward a resourceful and agroecological urbanism.

### **The *territorial transaction* allowed by the figure of the *foster metropolis* as a key for a transition toward a resourceful and agroecological urbanism**

The *foster metropolis* offers a perspective for transition of UFP toward an urbanism based on a *territorial transaction*. This *territorial transaction* opens paths toward a resilient urbanism as tackling food through its multidimensionality call for a transversal approach of the urban regions planning issues. The fostering look on urban regions allows connections, articulations, combinations between spaces, actors, themes and scales of action. Hence, going further than the only food supply issue offers opportunities in terms of renewed governance and spatial organization dynamics in urban regions.

In Lyon, thanks to the Urbact programme, a red thread has started to circulate between a diversity of actors, planning themes and scales of actions concerned by the food issue. Despite its limits (limited presence of agro-food industries, health and planning professionals and professional organizations), food accessibility, quality and sustainability issues were crossed with periurban and urban agriculture management, social action, health, public space, economical development, urban renewal, etc. planning issues. The 2015 engagement of the City and the Metropole of Lyon in the Milan Urban Food Policy Pact opens opportunities to better articulate the actions toward the food chain (with a better integration of the conventional and traditional actors) with the metropolitan planning issues (urban logistic, planning documents). The Urbact programme established a “neutral” governance scene, out of the local power game. This has allowed the experimentation of transversal, participative and collaborative governance that has led to the instauration of a Sustainable Food Policy Council in the end of 2015. This Council gathers the variety of actors, themes and scales of action (state to neighborhood) of the urban region. As a result, food appears as a good medium to tackle the multi-actors, sector and scales planning stakes of the urban regions and to establish a better coordination between them.

The emergence of the urban food issue could also predicts new spatial organization based on new forms of solidarity and reciprocity between spaces (rural-urban, close-far, local-global). The Torino Province that became in 2015 a Metropolitan City walks in this direction. The questioning about the food issue is structured in relation to the metropolitan planning issues. As in Lyon, the agricultural action siloe dominated in the emergence of the food issue. The sliding from the agricultural to the food issue was done in three stages. Concurrently to the winter Olympic Games in 2006, consideration got developed toward the mountain agriculture. Under the banner of a territorial mark (*Il paniere*), the policy was about promoting terroir local products valorizing them to the private caterers. Apart from 2006, this “niche” policy focused on the typical products opened to the quotidian consumers by sliding to the “km 0” products of the everyday food.. In this, the agriculture becomes a resource for the territory, it is no more an urbanization reserve. Since 2010, it is the “food governance” notion that has been invested. The Torino province got opened to all the actors of the local food chain, in particular those of the social and economical sectors (distributors, sanitary authorities, catering companies, *gruppo d’acquisto solidale*, social sector). A solidarity between urban and rural spaces, producers and consumers is sought. Since 2014, there has been a sliding from the *locavore* to the *foster metropolis*, that goes beyond the food



supply issue and that aims at thinking of a more sustainable and accessible food system implying the variety of the concerned actors (exceeding the conventional/alternative actors divide). In the beginning of 2015, the “Nutrire Torino metropolitan” project is launched. Concurrently to the territorial Italian reform, food has been identified as a cohesion medium, a way to avoid defensive positions and to account for the territorial interdependences in the sliding from the Province to the Metropolitan City authority. Here, as in Montpellier (France) where the metropolitan governance between urban and rural cities is reconfigured through the setting up of an agro-ecological and food policy (Michel & Soulard, 2017), food allows to test the interterritoriality (Vanier, 2008) under other arguments than the traditional ones of the metropolitan construction (such as mobility stakes, demographic weight, metropolitan functions or spatial balance of the metropolitan form). Food has also been identified as a territorial development motor during the elaboration of the third Strategical Plan for Torino toward 2025.

The professional trainings I conducted between 2014 and 2015 on the “local food strategy” also bring elements concerning a renewed spatial organization based on an urban-rural reciprocity for a more resilient urbanism. Here we will particularly report on the rural alpine territories applying for the 2014-2020 LEADER programme. The first training sessions have provoked a change of look for those territories and invited them to think of their relations with the urban territories under a new perspective. Regarding the issue of the food strategies, the territories have first positioned themselves as suppliers of the urban spaces. They did not defined themselves as territories experiencing own food issues as one of the main path of arrival on the food issue is the agricultural economy. As a result, some *a-prioris* have been identified that reconfigure the geographies of production and consumption and the perception of the relationships between urban and rural spaces. The urban-rural link have been re-tackled under the perspective of the rural and mountain dependency to the city. Concerning every-day food, it is the city and its networks that feed the rural. Because of the agricultural specialization, the supply in diversified products is complex. In the alpine territories, such as the avant-pays Savoyard or the Beaufortain, where the milk and cheese specialization dominates, the milk rentability weight more than the agricultural diversification for the everyday food of the territory (it is very difficult to develop market gardening projects). There, the consumer is more tackled in its “touristical” version than “inhabitant” version. But as in the urban spaces, there too there are questions of poverty, precarity and diversity of food communities. A last issue is the practice of the street market. The consumers of those territories are very much reliant on the supermarkets for their food supply as the local producers turn towards the urban areas where the power of purchase is more concentrated. As a result, thinking of food strategies invited those rural and alpine territories to better think on an inter-territorial mode. The *territorial transaction* and the *fostering look* can help in going beyond the divide between spaces by thinking the relation in terms of reciprocity. A resilient urbanism can be rethought in the history of the urban-rural relations: the rural that feeds the city, then the city than feeds the rural. The actual food issue may enrich a third age (Vanier, 2005), the one of the transactions and reciprocity relation between those two spaces accompanied by an improvement of the quality of the relation. The local food governance issue allows to think a relational density and not just a relational flow.

## Conclusion

Cities are today in front of a new *rendez-vous* : the way they feed themselves. The reconstruction of a *fostering look* is not easy and still presents some limits. But going beyond those limits opens path for a more resilient urbanism concerning the urban, rural and metropolitan issues. The territories can find there an occasion to cross sectorial actions (agriculture, tourism, mobility, urban logistic, health, environment, carbone footprint, economical development, social justice, etc.) while giving sense and savour to the metropolitan tales of the urban regions in the making whom built and feed themselves through *territorial transactions*.

## References

- Ascher, F. (2005). *Le mangeur hypermoderne. Une figure de l'individu éclectique*. Paris: Odile Jacob.
- Bellows, A.-C., & Nasr, J. (2010). On the past and the future of the urban agriculture movement: reflections in tribute to Jac Smith. *Journal of Agriculture, Food Systems, and Community Development*, 1(2), 17–22.
- Brand C., 2015. Food and metropolisation: Rethinking the territory in the light of a forgotten vital issue. Phd in géographie, Grenoble-Alpes University, 656 p.
- Broekhof, S.-M., & Van der Valk, A. (2012). Planning and the quest for sustainable food systems: explorations of unknown territory in planning research. In A. Viljoen & J.-S.-C. Wiskerke (Eds.), *Sustainable food planning. Evolving theory and practice* (p. 598). Wageningen : Wageningen Academic Publishers.
- Cohen, N., Ilieva, R.T. (2015), Transitioning the Food System: Toward a Strategic Practice Management Approach for Cities, *Journal of Environmental Innovation and Societal Transitions*, 17, pp. 199-217.
- Hodgson, K. (2012). Planning for food access and community-based food systems : a national scan and evaluation of local comprehensive and sustainability plans. American Planning Association.
- Ilieva, R. T. (2012). Empowering local food connections for resilient city-regions: planning through foodsheds or terroir? *Territorio*, (60), 61–66.
- Michel L., Soulard C-T. (2017). Comment s'élabore une gouvernance alimentaire urbaine ? Le cas de Montpellier Méditerranée Métropole. In: Caroline B, Nicolas B, Damien C et al. (eds) *Construire des politiques alimentaires urbaines : concepts et démarches*. Editions Quae, pp 137-151.
- Morgan, K. (2009). Feeding the city: the challenge of urban food planning. *International Planning Studies*, 14(4), 341–348.
- Morgan, K., & Sonnino, R. (2010). The urban foodscape: world cities and the new food equation. *Cambridge Journal of Regions, Economy and Society*, 3(2), 209–224.
- Pothukuchi, K. (2009). Community and regional food planning: building institutional support in the United States. *International Planning Studies*, 14(4), 349–367.
- Pothukuchi, K., & Kaufman, J.-L. (1999). Placing the food system on the urban agenda : The role of municipal institutions in food systems planning. *Agriculture and Human Values*, (16), 213–224.
- Pothukuchi, K., & Kaufman, J.-L. (2000). The food system. A stranger to the planning field. American Planning Association. *Journal of the American Planning Association*, 66(2), 113–124.
- Steel, C. (2009). *Hungry city. How food shapes our lives* (2nd ed.). London: Vintage.
- Terres en Villes, APCA, FNCUMA, FNCIVAM, & TRAME. (2009). *La gouvernance alimentaire des agglomérations françaises et la relocalisation des productions agricoles*.
- Vanier, M. (2008a). *Le pouvoir des territoires. Essai sur l'interterritorialité*. Paris : Economica, Collection Anthropos.
- Vanier, M. (2005). La relation "ville/campagne" excédée par la périurbanisation. *Cahiers Français*, (328), 13–17.
- Vanier, M. (2008a). *Le pouvoir des territoires. Essai sur l'interterritorialité*. Paris : Economica, Collection Anthropos.
- Wiskerke, J.-S.-C. (2009). On places lost and places regained: reflections on the alternative food geography and sustainable regional development. *International Planning Studies*, 14(4), 369–387.
- Wiskerke, J.-S.-C., & Viljoen, A. (2012). Sustainable urban food provisioning: challenges for scientists, policymakers, planners and designers. In A. Viljoen & J.-S.-C. Wiskerke (Eds.), *Sustainable food planning. Evolving theory and practice* (p. 598). Wageningen : Wageningen Academic Publishers
-

# **Sustainable Urban Food Districts (SUFD): Strategic spatial planning in Urban Food systems. An analysis to the Toronto Food Strategy Policy**

**Sebastian Felipe Burgos Guerrero**

Master Student in Sustainable Territorial Development, KU Leuven

Email: sebastianfelipe.burgosguerrero@student.kuleuven.be

---

**Keywords:** Food Policy, Urban Food Planning, Sustainable Food Systems, Strategic Spatial Planning

---

## **Abstract**

The recognition of a historical absence on urban food systems analysis by the academia, incentivized new discussion on planners and food activist only over the past 15 years. The predominant belief on food as an agricultural and rural issue, has fostered its detachment from the urban agenda, filling the gap with predominant market driven strategies. This paper aims to provide a comprehensive vision on the food system organization in urban areas, analyzing the need to integrate it into a broader urban strategy and strategic spatial planning. The challenges and opportunities it portrays highlights the need to consolidate competitive and sustainable solutions for an increasing urban population and their connected social challenges. Thus, comprehended into a broader spectrum of issues of public concern such as health, social justice, economic prosperity, social cohesion, food security, culture, waste management and ecological integrity. The paper includes the analysis of a case study, the Toronto Food Strategy as a recognition of the role urban planners could play to forge policies towards more sustainable food systems.

## **Introduction**

The population growth predicted by 2050 for about 9 billion people, underpins enormous challenges for the satisfaction of adequate food consumption. The growing productivity brought by the introduction of new technologies and intensive agricultural practices, supported a threefold increase on the food production over the past 50 years (FAO, 2015). Nevertheless, a limited access to food for vulnerable groups and an increasing food waste are still part of this reality. For the period of 2010 to 2012 estimations registered almost 870 million people, about 12.5 percent of the world's population, being under nourished and around 1 billion malnourished (FAO, 2015). This converges in opposition to the paradigmatic rise of obesity and cardiovascular diseases, due to unhealthy dietary patterns, as main concerns for the public health. A clear dilemma is underlined, increasing food supplies and limited or inadequate food consumption patterns at our current global food system. The inadequate access to food is therefore one of the main pillars of this challenging global perspective, determining physical, economic and social constraints, where poverty continue to be a main driver of social injustice and nutritional inequality (Eckert et al., 2011; Morgan, 2014; Marsden et al., 2014). In addition to these phenomena, scholars continue to reveal the ecological impacts of current food systems, with agricultural challenges, but not only, setting ground on water deficits, water, soils and air pollution, impoverishment of soil fertility, GHG emissions and deprived ecological systems at the core of the environmental global discussion concerning urban growth (Maria Oria, 2015).

In 2014, 54% of the world's population was living in urban areas, with projected estimations to increase by 2050 to 66% (United Nations, 2014). The growing urbanized world constitutes in this way a main leader for the discussion of food systems, setting the cities as key players on future sustainable solutions for the environmental, social and economic global and local challenges. In 1999, Kameshwari Pothukuchi<sup>1</sup> and Jerome L. Kaufman<sup>2</sup> acknowledged the separation and invisibility of the food system to planning and urban policy officials, considered an agricultural issue grounded in rural settings and a stranger to planning research (Pothukuchi and Kaufman 2000). This coincides with a growing urbanization movement that saw the progressive disappearance of local farms and a reduced and more distant position of food in the urban systems, with a growing control exerted by corporate organizations (Pothukuchi and Kaufman 1999). A renewed interest of planners, policy makers, entrepreneurs and civil

---

<sup>1</sup> Professor on Urban Planning at the Wayne State University

<sup>2</sup> Professor in Urban and Regional Planning and director of the Madison Food System Project at the University of Wisconsin

society over the past 20 years has intersect into a shared vision on the need to materialize sustainable solutions, revealing in food a growing topic of research and policy making (Ilieva, 2016; Morgan, 2013; Brinkley, 2013; Pettenati et al., 2015; Viljoen et al. 2012; Mendes et al., 2011).

This paper aims to shed light on the possible interconnections presented for urban planning to forge sustainable urban systems, in the integration of food systems analysis in the urban agenda and planning research. This followed a guiding question, can food be a cross cutting issue for planning research to consolidate sustainable urban systems in the broader public concerns? The research foresees a brief compilation of “the state of art” of the three main pillar concepts, Urban Food Systems, Urban Food Planning and Sustainability. A multidisciplinary research will be implemented, gathering information from different fields of study with related literature on urban and regional planning, applied geography, urban research, food system analysis, Social Innovation, Economic development, Rural Sociology and Food Policy. Finally, all the information will be analyzed and critically assessed on the specific Case Study of the city of Toronto, The Toronto Food Strategy, comparing the current urban food policy and future opportunities, to set the food system analysis at the table of planners and urban policy makers.

## **Conceptual Framework**

### **1.1 Urban Food Systems Analysis**

To understand the dynamics of Food and its different interactions in urban settings, a systemic approach in a multi-dimensional and comprehensive perspective is required. The Food system is an interdisciplinary study object, with a multifunctional character that sets a vision on multiple interconnections with the public health, the local economy, land use organization, distribution and transportation systems, agricultural land preservation, ecological integrity, solid waste management, food security and overall quality of life (Morgan, 2013, Ilieva, 2016; Brinkley, 2013). The food security, seen in the past essentially on a productive perspective, is now identified on its physical, social and economic limitations, whereby vulnerable populations fail in accessing to affordable and healthy foods (Pothukuchi and Kaufman 1999).

The analysis of urban food systems leads us therefore to the interrelated character of its different subsystems, conceptualized on the food cycle chain: production, transformation, processing, distribution, consumption, waste disposal, and the interconnections that each of those encompass on the aforementioned public concerns (Hammer, 2004; Ilieva, 2016; Viljoen et al. 2012; Maria Oria, 2015). The vision has effectively been assimilated by corporate organizations, setting a vertical integration model as core of their business structure and planning strategies, represented in Agro-parks, vertical farms and other institutional organizations, allowing them to exert control on the whole process from the farm to the dish.

Three main interrelated systems in the urban foodscape have been identified: 1) The dominant conventional food system, as main provider of food for cities, represented in food stores, wholesalers and agribusiness corporate organizations. 2) The emergency food systems in the form of food banks, food pantries and soup kitchens, as a private and public cooperation to alleviate major failures of the previous mentioned system, in benefit of the poor and vulnerable groups of the population. Parallel to these two, the alternative food systems (AFS) emerged as a reactionary movement to the loosed connection of local farmers and city consumers, viewed as a re-territorialisation process in a so called “co-producer” dynamic form of cooperatives (Agrillo, 2015; Broekhof et al., 2012), farmers markets, community supported agriculture farms with a strong emphasis on environmental sustainable food production, local and community bonds. The latter, aggregates an emergent group, the so-called community food security movement, bridging conventional channels with sustainable agriculture communities (Pothukuchi and Kaufman 2000; Broekhof et al., 2012; Ilieva, 2016; Brinkley, 2013). It is in this foodscape, where a complex net of power relations has been forged, creating a strong concentration of players and dominant relations from the conventional food systems in form of corporate organizations, with a clear and predominant globalized and monopolistic character for our current food system. The urban food system in this context is situated at a passive position, being mainly represented as a main center of consumption in the global flows of distribution, alienated from other forms of production and organization (Pothukuchi and Kaufman 2000; Pothukuchi and Kaufman 1999). The dependent position of urban areas to the global circulation of food, demonstrated to be threatening,



represented in the “new food equation” (Ilieva, 2016). This took form during the food crisis of 2007/2008 where global major crop prices increase put the food security of cities in doubt, combining to poor geographic and economic access and disproportioned environmental injustices and nutritional inequalities added major pressure to urban policy makers. The convergence of this elements resulted in renewed attention and awareness of leaders and civil society to strength the call for sustainable ‘local’ urban food systems as a key element of the urban agenda (Morgan, 2009; Ilieva, 2016).

## **1.2 Urban Food Planning**

Despite what has been agreed so far, food has not been only an issue of modern research. In 1946, Ebenezer Howard discussed what he denominated the New Garden cities, as a vision of marriage between town and country, in the form of a green belt, appropriately located and efficiently served by transport systems, to integrate the circular food system approach, of production, distribution, consumption and recycling into the design of urban systems (Morgan, 2009). In conjunction to Howard’s proposition, Walter P. Hedden shed light in 1929 on his work *How great cities are Fed*, the enormous physical and economic challenges that cities had to overcome as to ensure the appropriate distribution and consumption of food, highlighting the functional role of municipal food terminals as part of the urban planning (Knapp, 1930).

The quest for sustainable solutions in the current complex dynamics of urban food systems raised an emerging movement of planners, with renewed interpretations and interest on the broader multidimensional possibilities of food to contribute in rendering cities more sustainable with respect to its social, economic and ecological effects. In 2009, Morgan defined food planners as “anyone who is working in, or engaged with, the food system with the aim of rendering it more sustainable” agreeing this to be one of the most important social movements of the early twenty-first century in the global north (Morgan, 2009). The previous mentioned barriers described by Pothukuchi and Kaufman in the early 2000’s, not being well integrated to planning issues, based on a political dichotomy of rural and urban domain, not well economically funded nor institutionally supported, drove primarily by the private market sector and perceived as well responded by these forces (Pothukuchi and Kaufman, 2000); seem today to be overcome (Ilieva, 2016). In 2007, the American Planning Association issued a White Paper introducing food in the planning agenda at the same level of other sectors, such as housing, transport, energy and green spaces. Contemporaneously, the Association of European Schools of Planning established its first Food Planning Working Group in 2009, bringing together a diverse range of backgrounds from different fields, be they planners, policy-makers, politicians, designers, farmers, civil society, and others, engaged in rendering the food system more sustainable (AESOP, 2017). Other to the academic momentum experienced in the last years for the food systems research, food started to be also a main driver of political action in the form of guidelines, policies, programs and planning strategies at the national, regional and urban level. The goal of improving citizens’ health, small farmers’ ability to stay in business, and cities’ climate resilience, has brought a global empathy to food policies and strategies (Ilieva, 2016). Cities all over the world have embraced food on its urban plans, represented in emblematic cases as London (Reynolds, 2009), Amsterdam (AMS’ Network for Sustainable Food Planning, ANFP), Utrecht (Morgan, 2009), Toronto (Mah et al., 2013) or Belo Horizonte, “the city that ended hunger” (Morgan, 2009). The reconnection of food with cities relies at the core of the emergence of the so-called Food policy councils, already over 100 in the U.S., supporting the implementation of broader goals on public health, economic development, social justice and sustainability through the lens of food. Carolyn Steel on her famous book *Hungry city* emphasized this potential, which “viewed laterally, emerges as something with phenomenal power to transform not just landscapes, but political structures, public spaces, social relationships, cities” (Steel, 2008). Among other things, food policies have served as effective institutional tools to bridge sectors, visions and actions in common strategies and alliances. Thus, creating a knowledge pool of information and good practices for both researches and local actors. Planners as such, are contributing in collecting, compiling and analyzing data, relevant for decision making, interconnecting food with other planning sectors and assessing the impacts of current food planning strategies. They may also contribute on the dissemination of good practices, educating future planners on food systems issues and integrating sustainable values in the planning agenda (Pothukuchi and Kaufman, 2000).

The case study presented at the end of this paper, the Toronto food Strategy Policy, will shed light on these experiences, providing key factors, tools and methodological opportunities for planners and urban decision makers to effectively integrate food in future research and urban policies. The paper emphasizes on the opportunities of a conceptual model, so called Sustainable Urban Food Districts (SUFD) as a sustainable cluster for the materialization of alliances and synergism in a common food strategy towards sustainable urban food systems.

*“When considering the relation between cities and food, we tend to think about it as the sole matter of choosing the best way to feed cities and ignore the social, cultural, and environmental opportunities that systems unsuited for ensuring steady and abundant influx of food in cities can yield. If cities are to play a pivotal role in tackling the challenge of sustainable development, this mindset will need to change. The emergent realm of urban food planning is one domain of practices that opens up new spaces to do so” (Ilieva, 2016).*

### **Urban Food Districts, towards Sustainable Urban Food Systems**

Kevin Morgan<sup>3</sup> condensed with these words the importance and challenges of sustainable food systems in cities:

*Feeding the city in a sustainable fashion — that is to say, in way that is economically efficient, socially just and ecologically sound — is one of the quintessential challenges of the twenty-first century and it will not be met without a greater political commitment to urban food planning and a bolder vision for the city. (Morgan, 2013)*

The food planning movement needs to embrace a cosmopolitan conception of sustainability in which alternative re-territorialized local food systems could merge with a broader global and supra-local level into a balanced parity of esteem, avoiding what Morgan agrees to be a new “social movement (...) degenerated into a parochial form of green localism” (Morgan, 2013). One example is given by Morgan, linking how the American food planners’ association surpassed the limitations of localism through the creation of a national network, the Community Food Security Coalition, giving to each single local food movement a national recognition, support and representation (Morgan, 2013).

However, continuing with Morgan’s proposition, sustainability cannot be reduced to a carbon metric parameter, linked to local or global food production, but it should embrace both social and economic as well as environmental dimensions. Suggesting more focus on the social realm, where a moral obligation has still to be re-emphasized to the poor and hungry of the world, neglected in the current food system (Morgan, 2013).

The spatial analysis of urban systems, as may be the food, can be of valuable contribution for this ambition. One of the challenges of a spatial approach to food dynamics is the understanding of territorial cohesion. The synergic relations created by the integration of different actors and subsystems, may be of important contribution for the broader urban social, economic and environmental development process. This should be grounded on the spatial analysis of the urban foodscapes, using planning tools and analysis methods to reveal relevant information and characteristics that drive strategic spatial configurations. These could be represented in the form of urban agriculture initiatives, land use schemes, transportation systems and logistics, Community food security assessments (Pothukuchi, 2004), food transformation and processing systems, distribution channels, spatial mapping on the access to food in form of stores and farmers markets (Eckert et al., 2011), food consumption and dietary behaviors and effective waste management cycle systems, among others (Hammer, 2004; Pothukuchi et al. 2000; Brinkley, 2013; Tornaghi, 2013; Ilieva, 2016; Viljoen, 2012; Campbell, 2004). As such, we found great opportunities for sustainability in the spatial planning research on food systems, identifying possible opportunities in geographical organizations of so called food clusters or food districts. The Food cluster,

---

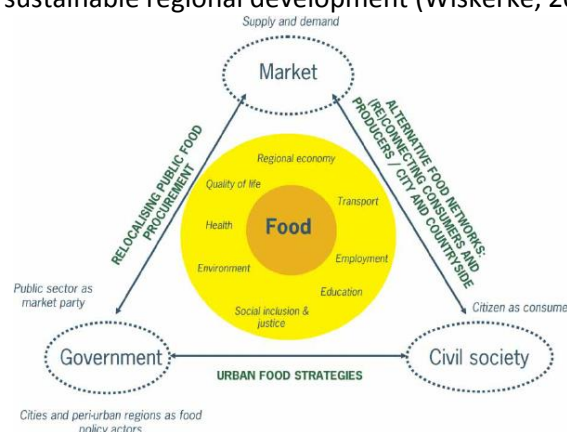
<sup>3</sup> Professor at the school of planning and geography at the Cardiff University

in this view is a space where different levels of exogenous and endogenous initiatives and networks come into play (Jansen-Verbeke, 2007).

The basic dynamics of food and innovative districts lay in the proximity of elements, facilities, resources and activities. This offers advantages for food production, whereby customers, human resources, costs, risks and benefits can be shared and supported. A geographic concentration offers advantageous conditions for synergism and networking between different initiatives, activities and stakeholders (Jansen-Verbeke, 2007). The organization of 'urban food districts' can play in this view an important role in the strategic urban planning on food systems, enhancing the role of food in the local economy, supporting innovation and creativity in small farmers and citizens, enhancing the sense of belonging and social integration, coping with ecological integrity of a changing climate and supporting renewed landscape urbanisms.

Physical and functional networks improve the business opportunities and the community cooperation, for the development of inter- or intra- sectoral strategic alliances (Jansen-Verbeke, 2007). The food district discloses valuable opportunities with several benefits, mainly in terms of food security, social innovation, community building, social integration and as a medium for urban regeneration and competitive economic development, in the consolidation of sustainable urban systems (Hammer, 2004; Pothukuchi et al. 2000; Eckert et al., 2011; Pothukuchi, 2004; Ilieva, 2016; Viljoen, 2012; Campbell, 2004; Broekhof et al., 2012). Food clusters could be described as functional and innovative hubs in networking stakeholders, at a geographic core area for the materialization of sustainable urban food systems (Jansen-Verbeke, 2007). The SUFD's encompass strong partnerships and alliances between different systems and actors, unifying interests into synergies for sustainable food production, efficient and re-territorialized distribution systems, innovative and traditional transformation and processing systems, healthy and cultural appropriate food diets and enhancing circular waste management cycles, on a social, cultural, economic and environmental territorial perspective.

The more the food system is being dominated by global forces, the greater the value to re-emphasize the uniqueness of territories, the differences between places, regions and cultural distinctiveness of communities (Jansen-Verbeke, 2007). The re-localization of the food system has been widely discussed by scholars (Campbell, 2004; Broekhof et al., 2012; Mansfield et al., 2013; Agrillo et al., 2015; Hammer, 2004; Pothukuchi, 2004; Ilieva, 2016; Viljoen, 2012), agreeing on the definition of local food as a re-territorialized system of relations, cooperation and sustainable alternatives for cities (Broekhof et al., 2012; Ilieva, 2016; Viljoen, 2012). This vision is well represented in the so called integrated territorial food geography concept (Figure 1) described by Johannes Wiskerke as a territorial and integrated modus of food governance, linking different public domains and policy objectives (Government, Market and Civil Society) to contribute in the sustainable regional development (Wiskerke, 2009; Viljoen, 2012)



**Figure 1: Integrated Territorial Food Geography (Wiskerke, 2009).**

Nevertheless, it is important to keep the discussion in the current global context, encompassed in the dominant role of international corporations, which need to be re-configured rather than entirely replaced into this territorial perspective (Ilieva, 2016). This paper argues that a middle way is possible, whereby planning research may intersect the major opportunities to bring the food issue back to the urban agenda and set a collective and participative discussion on the consolidation of sustainability in the urban systems (Broekhof et al., 2012; Campbell, 2004). Their success will depend on the effective

capacity of planners and decision makers to build such alliances, serving themselves of food as a common agent for creating strong partnerships, beyond sectoral or institutional boundaries (Morgan, 2009). The Sustainable Urban Food District (SUFD), could bridge these opportunities, clustering different actors and networks in strategic alliances that re-enforces the role of food in the city, providing synergism and spatial spheres between the different dominant systems at the pair of small and emergent ones, to engage them all in joint initiatives, activities and policies of a common food strategy.

### **The Toronto Food Strategy Policy Case Study**

The Toronto Food Strategy will guide the research to the understanding of challenges, barriers and dynamics that beared in the urban food governance process of Toronto. The research has been restricted to the available literature, city plans and policy recommendations since the early attempts of the city to bring such initiative to the urban agenda in 2007. The short analysis will provide us a clear vision on the opportunities for SUFD's to integrate and materialize such strategies in the strategical planning of cities and urban food geographies (Wiskerke, 2009).

#### **3.1 The Toronto Food Strategy**

In spring 2008, the Toronto board of health endorsed the initiative for the development of the first Food Strategy for the city. The rapid acceptability of the proposal resulted on the assignation of Pieter Dorfman for the development of the Strategy (Mah et al., 2013). In May 2010, the introduction of the Toronto Food Strategy, *Cultivating Food Connections: Toward a Healthy and sustainable Food System for Toronto*, was achieved. Stating in the initial report of 2010, to be "more than just a report or set of recommendations. It is the ongoing process of identifying, building and strengthening positive connections - between local government and residents, among City Divisions, within the community, and with the countryside (...) about the future of Toronto's food and creative initiatives that are flourishing across the city" (Toronto Public Health, 2010)

The strategy was built on the positive achievements undertaken in the past by the Toronto Food Policy council, established in 1990, and the Toronto Public Health on issues such as the lack of economic security of local food producers, the high levels of food waste, the inequalities on healthy food access, the growing rates of obesity and chronic diseases and the environmental threats of intensive food production and climate change, of a growing and highly diverse city with over 5.5 million inhabitants as in the great area of Toronto (Blay-Palmer, 2009). Striking issues as poverty and health inequality, became main drivers for the local government to see in food a meaningful vehicle for inter-sectoral action and policy change (Toronto Public Health, 2010).

The strategy set the basis for cooperation, opening a deliberative and innovative space for mutual construction of meaning (Mah et al, 2013), forge alliances and create synergism among the different food stakeholders in an inclusive discussion toward a healthy and sustainable food system (Toronto Public Health, 2010). The group succeeded to become a bridge between the municipality and local communities, engaged on the formation of local networks and active citizenship as incubators for policy innovations, partnership creation and social change. With this aim, the strategy identified six main guiding objectives, elimination of hunger, food as a centerpiece of the new green economy, food friendly neighborhoods, empowered residents with food skills and information, a connected city and country-side through food and an embedded food system thinking in city government (Toronto Public Health, 2010; Mah et al., 2013)

In this way, food became a main instrument to act a healthy, sustainable and prosperous city. The strategy created a propitious environment that set the food system thinking at the table of planners and policy makers, bridging horizontal management strategies and collaborations among governmental divisions, while addressing broader social constraints in connection with an active citizenship. This enable all municipal divisions and civil society to work together, setting a latent urban governance mechanism that made food visible in the urban political agenda (Blay-Palmer, 2009).

Some strategical initiatives were undertaken for this period, we would like to focus on three of them, relevant for the scope of this research: The food access mapping, the community food skills and employability pilot project and the Community kitchen food hubs. The former is described as a geographical mapping of the city for the identification and data collection of the Toronto foodscape

(Toronto Public Health, 2013). The initiative reveals main geographic gaps on the accessibility and availability of healthy and affordable foods, and provided main social indicators in connection to space on the local and regional food production (Mah et al., 2013). The instrument provided key information to decision makers for the effective and appropriate implementation of research-based solutions. Some of these resulted in the strategical distribution of mobile vending trucks, flexible transit transfers and participatory actions at the neighborhood level (Toronto Public Health, 2016). 2) The Community food skills and employability pilot project, provided skill formation and institutional support in form of food literacy programs and food safety training to marginalized communities (Toronto Public Health, 2016). The initiative in cooperation with other agents of the city, materialized economic opportunities for citizens, setting a certification scheme that allowed participants to be more competitive in their search for jobs in the food sector (Mah, et al., 2013). 3) The community kitchen policy initiative, provided common spaces for interaction and social engagement around food. The initiative connects different communities together in “food hubs”, as incubator spaces (Ilieva, 2016) in form of supportive neighborhoods, using kitchens as ground spaces for intercultural interaction, social integration and innovation. (Fridman et al., 2013).

As we saw, the Toronto food strategy succeeded to be an effective mediator between the local municipality and an active citizenship and created relevant partnerships among society for common objectives. The Strategy, used food not as a political objective per se, food as policy, but as an enabler of broader social change, food for policy. The strategy helps to define possible boundaries and opportunities for food systems analysis and planning research to draw sustainable paths for the urban governance of food systems, identified in three planning tools: GIS for the collection of data on foodscapes (Eckert, 2011), Community food Security assessments (Pothukuchi, 2004) and incubator rooms (Ilieva, 2016), in form of the so called “food hubs”. These are relevant examples of possible contributions that planning practices could forge in the effective and appropriate implementation of actions toward sustainable urban food systems.

## **Conclusions**

This paper provided an overall review on the opportunities that the food systems analysis in conjunction with planning thinking can forge towards the construction of sustainable urban systems. An emblematic example, the Toronto Food strategy, helped us to define the major challenges and dynamics that food leading strategies could bring to the urban governance systems, setting food as an effective vehicle for inter-sectoral cooperation, horizontal management and active citizenship, into a food for policy vision. The proposed Sustainable Urban Food Districts model, provides further insights in possible planning systems to materialize such strategies into real actions and cooperation schemes where the urban governance could be implemented more effectively. This need to be based on the spatial analysis and complex understanding of socio-spatial dynamics, encompassed in the strategical spatial planning research. In this view, the SUFD’s aims to stimulate further research on this field of study and contribute to the collective goal to bring sustainable solutions to our current Urban food system.

## References

- Agrillo, C.; Milano, S.; Roveglia, P.; Scaffidi, C. (2015) Slow Food's Contribution to the Debate on the Sustainability of the Food System, Paper prepared for presentation at the 148th seminar of the EAAE, "Does Europe need a Food Policy?", Brussels, Belgium, 2015.
- Blay-Palmer, A. (2009) The Canadian Pioneer: The Genesis of Urban Food Policy in Toronto, *International Planning Studies*, 14:4, 401-416
- Reynolds, B. (2009) Feeding a World City: The London Food Strategy, *International Planning Studies*, 14:4, 417-424
- Brent Mansfield & Wendy Mendes (2013) Municipal Food Strategies and Integrated Approaches to Urban Agriculture: Exploring Three Cases from the Global North, *International Planning Studies*, 18:1, 37-60
- Brimblecombe, J., van den Boogaard, C., Wood, B., Liberato, S., Brown, J., Barnes, A., Rogers, A., Coveney, J., Ritchie, J., Bailie, R. (2015). Development of the good food planning tool: A food system approach to food security in indigenous Australian remote communities, *Health & Place* 34(2015)54–62.
- Broekhof, S. and Van der Valk, A. (2012). Planning and the quest for sustainable food systems: explorations of unknown territory in planning research. *Sustainable food planning: evolving theory and practice*, chapter 32 pg. 393-404. Wageningen Academic Publishers, The Netherlands, 2012.
- Campbell, M. (2004). Building a Common Table: The Role for Planning in Community Food Systems, *Journal of Planning Education and Research* 23:341-355
- Carsjens, G. J. 2015. Food in space: the spatial organization of food systems. *Agric Eng Int: CIGR Journal*, Special issue 2015: 18th World Congress of CIGR: 10-17.
- Brinkley, C. (2013) Avenues into Food Planning: A Review of Scholarly Food System Research, *International Planning Studies*, 18:2, 243-266
- Mah, C. & Thang, H. (2013) Cultivating Food Connections: The Toronto Food Strategy and Municipal Deliberation on Food, *International Planning Studies*, 18:1, 96-11
- Eckert, J.; Shetty, S. (2011). Food systems, planning and quantifying access: Using GIS to plan for food retail, *Applied Geography*. Volume 31, Issue 4, October 2011, Pages 1216–1223
- FAO (2015). Statistical Pocketbook 2015. World Food and Agriculture. FAO, Rome
- Food Smart Cities for Development. Recommendations and Good Practices. October 2015
- Giacomo Pettenati & Alessia Toldo (2015) Introduction to special book review issue: giving food its space. Reflections about food planning and urban food systems, *Urban Research & Practice*, 8:3, 371-373
- Hammer, J. (2004). Community Food Systems and Planning Curricula *Journal of Planning Education and Research* 23:424-434
- Haugum, M.; Grande, J. (2017). The Role of Marketing in Local Food Networks, *Int. J. Food System Dynamics* 8 (1), 2017, 1-13
- Ilieva, R. (2016). *Urban Food Planning: Seeds of Transition in the Global North* (Routledge Studies in Food, Society and the Environment). Milton: Taylor and Francis.
- Ilieva, R. (2016). Urban Food Systems Strategies: A New Tool for Implementing the SDGs in Practice? International Conference on Sustainable Development (ICSD), September 2016.
- Jansen-Verbeke, M. (2007), Cultural Resources and the Tourismification of Territories, *Acta Turistica Nova*, 1 (1), pp. 21-41.
- Knapp, J. (1930). *The Journal of Business of the University of Chicago*, 3(2), 263-266.
- Mah, C. (2012) Local Food Policy in Canada and the Next 20 Years of the Toronto Food Policy Council: An Interview with Lauren Baker. *The Journal of Canadian Food Cultures*, Volume 3, Numéro 2, 2012
- Maria Oria. (2015). *A Framework for Assessing Effects of the Food System*. Washington: National Academies Press.
- Marsden, T. and Morley, A. (2014). *Sustainable food systems. Building a new paradigm*. Edited by Routledge, Taylor & Francis Group, 2014, 240 pp
- Mendes, W., Nasr, J., with Beatley, T., Born, B., Bouris, K., Caton Campbell, M., Kaufman, J., Lynch, B., Pothukuchi, K., & Wekerle, G. (2011). Preparing future food system planning professionals and scholars: Reflections on teaching experiences. *Journal of Agriculture, Food Systems, and Community Development*, 2(1), 15–52.
- Morgan, K. (2009) Feeding the City: The Challenge of Urban Food Planning, *International Planning Studies*, 14:4, 341-348.
- Morgan, K. (2013) The Rise of Urban Food Planning, *International Planning Studies*, 18:1, 1-4.
- Morgan, K. (2014). Nourishing the city: The rise of the urban food question in the Global North, *Urban Studies* 2015, Vol. 52(8) 1379–1394

- Fridman, J. & Lenters, L. (2013) Kitchen as food hub: adaptive food systems governance in the City of Toronto, *Local Environment*, 18:5, 543-556
- Pothukuchi, K and Kaufman, J. (2000) The Food System, *Journal of the American Planning Association*, 66:2, 113-124
- Pothukuchi, K. (2004). Community Food Assessment: A First Step in Planning for Community Food Security, *Journal of Planning Education and Research* 23:356-377
- Pothukuchi, K.; Kaufman, J. (1999). Placing the food system on the urban agenda: the role of municipal institutions in food systems planning, *Agriculture and Human Values* 16: 213-224, 1999.
- Wiskerke, Johannes S. C.(2009) 'On Places Lost and Places Regained: Reflections on the Alternative Food Geography and Sustainable Regional Development', *International Planning Studies*, 14: 4, 369 — 387
- Steel, C. (2008). *Hungry city: How food shapes our lives*. London: Chatto & Windus.
- Tornaghi, C. (2013). Critical geography of urban agriculture, *Progress in Human Geography* 2014, Vol. 38(4) 551–567
- Toronto Food Policy Council (1999). *Feeding the City from the Back 40: A Commercial Food Production Plan for the City of Toronto*, A section of the Toronto Food Policy Council's submission to the City of Toronto's Official Plan. November 1, 1999
- Toronto Public Health. *Bring Food Home: Food Access Mapping*. November 2013.
- Toronto Public Health. *Toronto Food Strategy: 2016 Update*. October 2016
- Toronto Public Health. *Cultivating Food connections: Towards a healthy and sustainable Food System for Toronto*. May 2010
- United Nations, Department of Economic and Social Affairs, Population Division (2014). *World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352)*.
- Viljoen, A., & Wiskerke, Johannes S.C. (2012). *Sustainable food planning: Evolving theory and practice*. Wageningen: Wageningen Academic, The Netherlands, 2012
-

## Urban futures and food production

**Silvio Caputo**

School of Architecture, University of Portsmouth, UK.

Email: [silvio.caputo@port.ac.uk](mailto:silvio.caputo@port.ac.uk)

---

### Abstract

The resurgence of urban agriculture (UA) seems to be in full swing, with local policies embracing it through food charters and other initiatives, academic debate developing in-depth insights on its multi-functionality, and groups and social enterprises increasingly practicing it in diverse forms. Despite this growing interest, the purpose for it remains unclear, with some actors pursuing it for social purposes and others for ecological enhancement or even as a form of protest. Concomitantly, beyond the seminal conceptualisation of urban productive landscapes as an integration of UA within urban development, advancements on this topic have been marginal. Academic debate seems to focus predominately on issues such as healthy lifestyles and food security, but much less on models of dense cities based on productivity (economic, of food, ideas and social relations) and a just access to resources. The article is a theoretical contribution in this direction. It builds on the thesis formulated by Srnicek and Williams (2015), which posits that 'localism' and community-based approaches characterising many of the left wing movements over the last decade are the main cause for their failures to gain general consent. This is because such approaches lack a unifying, global vision that can be perceived as an alternative to the current neo-liberal regime. The article reviews four of the most celebrated city models that have UA at their core to subsequently discuss a unifying urban vision of a UA city, which can in turn provide long-term guidance to the many, varied UA projects in developed countries.

### 1. Introduction

As for any fast-growing phenomenon, it is important to establish dynamics behind the recent fast resurgence of Urban Agriculture (UA) practices and question their capability of leading to positive change, rather than being a temporary, albeit meaningful, movement, possibly born in reaction to particular historical conditions (Colasanti et al., 2012). In fact, the proliferation of academic studies, policy report and grassroots movements that focus – and have focused over recent years - on urban food growing is substantial, thus suggesting that UA has moved from a past, European practice of subsistence (e.g. in wartime) or leisure (e.g. in the post-war society) to one that has other motivations. Ioannou et al. (2016) suggest that such motivations can be broadly reduced to three categories, namely: political, environmental and social. Although this classification is useful to give some clarity to an otherwise very diverse movement of urban farmers, a closer examination of the literature demonstrates that in reality UA is a flexible concept, open to many interpretations. One of the main strengths of UA, much praised in the literature, consists in the multifunctional benefits it can yield (Koopmans et al., 2017), including community making (Holland, 2004), environmental awareness (Travaline and Drexel Engineering Cities Initiative, Drexel University, Philadelphia, PA, 19104, USA Hunold, 2010), neighbourhood beautification and community empowerment (Glover, 2003; Wakefield et al., 2007), political activism (Ceromà and Tornaghi, 2015) as well as biodiversity, resilience, food security and healthy food and lifestyles, to name a few. Indeed, benefits are so many as to lead to apparent inconsistencies. A case in point is groups of guerrilla gardening, which while claiming the right to the city (see Adams and Hardman, 2013), strive for its beautification thus showing a form of civic awareness (Certoma', 2011). Another issue that must be considered is the short life of many of these projects, which are often dependent – especially with regard to community gardens - on external funds and volunteers, both insecure. Capital Growth, an initiative for London promoted by Sustain – a charity focused on food – and the Mayor of London, facilitated the implementation of more than 2500 food gardens between 2010 and 2012 ([www.capitalgrowth.org.uk](http://www.capitalgrowth.org.uk)). A first glance at the projects detailed on the dedicated website shows that some have already closed. Reasons for their closure are difficult to ascertain, although it can be surmised that these include economic difficulties and work conditions limiting the time commitment of leaders and volunteers or the mere evidence that food growing can require training and skills that not all are prepared to undertake and gain. Many scholars seem to believe that UA practices are propagating



and people will continue embracing it. Yet, a compelling and articulated motivation for this to happen still needs to be provided (Colasanti et al. 2012).

With a vast diversity of interests and the precariousness characterising many of the recent UA projects, the question arises whether there is a convergence of objectives and a clarity of views that can aggregate a multitude of initiatives and make them stronger. This is a key question because, this paper argues, only a vision that is shared by all farmers and clearly promoted outward can support a wide variety of different projects and motivate a long-term commitment of all urban stakeholders. The article builds on the theory developed by Srnicek and Williams (2015), which, in discussing the implementation of policies offering an alternative to current ubiquitous neoliberal regimes, maintains that only a clear and strong vision of the future can motivate society, support such policies and trigger a paradigm change. The article is theoretical and explorative in nature. It is based on a literature review of urban models supporting UA and subsequent desk analysis identifying the key principles that could unify an urban vision that all farmers can endorse. It firstly exposes the thesis of Srnicek and Williams' theory. It then reviews some predominant theories on urban forms supporting UA practices. Finally, in the discussion section, it outlines some founding principles for a unifying vision of a city integrated with UA.

## **2. A theory to design a paradigm shift**

In their book *Inventing the Future*, Srnicek and Williams (2015) argue that the global success of neoliberalism is a consequence of a long-term effort to propose an ambitious idea of society based on a competitive and unfettered market. These factors (i.e. ambitious, unifying idea and long-term effort) cannot be found in contemporary left-wing parties and movements, which, although characterised by energy, creativity and enthusiasm have failed to elaborate a bold alternative to free market and a strategy to pursue it. In the course of three to four decades, promoters of a market-based society have slowly but perseveringly shifted the common understanding of two key principles of contemporary society, namely modernity and freedom. Modernity is a concept that can be used in different ways, depending on the viewpoint. For example, it can characterise an historical period (the Renaissance, the Enlightenment, etc.) or it can be taken as a synonym for a model of liberal democracy, typical of western societies. However, within the predominant neoliberal interpretation, to modernise today is understood as to liberalise (e.g. cutting red tape, relying on competition as a mechanism for optimisation of the market and an engine for progress in technology, and so on). Likewise, freedom is perceived as 'individual freedom, freedom from the state and freedom to choose between consumers' goods'. Shifting the understanding of these principles and embedding it in every aspect of contemporary life, resulted in a global endorsement of a particular vision of society, which is now viewed as the norm.

Srnicek and Williams' critique of left wing movements is the lack of substance when it comes to conceiving a radical alternative to neoliberalism. These movements, they maintain, have been successful in capturing the discontent of many towards neoliberalism's inefficacy in redistributing wealth in a just way, but much less in articulating long-term objectives that can act as guidance for the diversity of manifestations (e.g. Occupy, Transition Town movements, Black Lives Matter, etc.), which are disconnected and often short-lived. So what are the key concepts of the city that needs to be redefined in order to move towards a new alliance between city and farming?

The future must be designed having in mind the present (and if relevant, the past), in which traces can be found of trends, ideas and common feelings embedded in culture. It is critical to build on these traces in order to design a paradigm shift that all can understand, recognise and identify with. On this assumption, the following paragraph reviews models of cities that are, knowingly or unknowingly, part of the cultural background of many developed countries and beyond, in order to identify some powerful drivers that can compose a unifying vision for a future UA city.

## **3. City forms and urban agriculture**

When an urban model that can support UA is considered, two elements must be taken into account: space and purpose. UA generally comprises urban and peri-urban activities. However, rural patches on

urban edges are less restrained by the built environment, still preserve their rural ambience and have been typically used for agricultural purposes. It is when UA is located within cities that its urban character becomes evident (Vejre et al., 2016) and space and purpose become problematic. It is therefore against this backdrop that UA must be commonly understood by all as a meaningful practice. In terms of purpose, it must be noted that in Europe, UA has been practiced alternately for subsistence and leisure, depending on the geographical area and the moment in time. For example, in the UK, some authors mark the insurgent movements against the Enclosure Act as the historical moment in which protest against the privatisation of commons started (and with it, the allotment movements), motivated by the need of land for sustenance (Acton, 2015; Crouch and Ward, 1997). In Germany, Schreblergärten were started to enable healthy practices for children in cities (Crouch and Ward, 1997). Against this clarity of purpose of past practices, today UA is characterised by multifunctionality. Vejra et al (2016) add three other elements (which they call dimensions) that characterise UA. In addition to spatial (where it takes place?) and functional (for which purpose?), the dimensions of motivation (why is it practiced), market (how is it consumed), actor (who performs it?) and origin (how did it start?) are also to be considered. An analysis of these dimensions, the authors contend, enables UA to be linked to macro factors of the urban system, thus becoming a public matter. Using four of these dimensions (i.e. spatial, functional, economic and actors), four UA urban models are analysed in order to identify a unifying contemporary view of the future UA city, based on a desirable, shared perception of such dimensions. Table 1 summarises the analysis.

	<b>spatial</b>	<b>Functional</b>	<b>actors</b>	<b>economic</b>
Garden City (Howard, 1902; Keshavarz and Bell, 2016)	Distributed	Subsistence health	Working class Self-managed	n.a.
Von Thunen model (Sinclair, 1967; see also Kitsikopoulos, 2003)	Peri-urban Rural	Urban self- sufficiency	Local Governments Market	Capitalism
CPULs (Viljoen, 2005)	Network	Multifunctional	Community groups Local Governments	Job creation
Temporary City (Németh And Langhorst, 2014; see also Bell et al. 2016)	Random	Multifunctional Urban Regeneration	Community groups Local Governments	Fluid

Table 1: *comparative table of four city models based on UA, using the dimensions of UA as identified by Veje et al, 2016*

The four urban models offer different approaches to the integration of UA practices within their vision of the city. The Garden City is a rather romantic embodiment of the urbanised rural (i.e. village) turned into city. Gardens are private and distributed over the urban area. Nature is valued mainly for its capacity to support a healthy life, with food production representing a means to the achievement of such a purpose. The model conceptualised by van Thunen strictly follows a market logic. It does not attempt any integration between urban and rural but provides a spatial model of a city expanded to include functions that are key to its life. It was designed at a time in which agriculture was still an integral part of the economy of developed countries, although it demonstrates that on the one hand, the extended outer belts of the city can be strictly linked with its economic life and on the other hand, urban self-sufficiency

is possible. It was recently revisited as a spatial organisation with the potential to significantly reduce cities' carbon footprint (see Girardet, 2004). Von Thunen's city may not be viable under a neoliberal paradigm, although it offers an 'engineered' separation of the urban / rural areas, with UA being entirely peri-urban and the urban fabric remaining dense and not-mixed with productive green. Today, such a model would possibly have radical consequences not only in terms of self-sufficiency but also with the way urbanites perceive nature and farming practices. Would agrarian belts lead to a tighter social-ecological link between the built environment and its rural environment?

More recent urban models include CPULs and the Temporary City. The first one is now a well-established idea of land use, with spaces in between – and within - buildings forming a productive network. It is an idea mediated by the assumption that city fabrics are typically scattered with public spaces that can be transformed in green areas, and existing and new buildings can integrate vertical and horizontal food growing elements. In this vision, grassroots movements are the key actors that will catalyse policy consensus. UA, being multifunctional, caters for the great variety of farmers' backgrounds, interests and needs. Economic drivers are important (i.e. job creation), although these are only one of the benefits UA engenders. Finally, the Temporary city can be seen as a variation of CPULs. There is no fully-fledged model under this term, which is an umbrella under which few studies are grouped (Németh and Langhorst, 2014; see also Bell et al. 2016 as a presentation of a 4-year long, COST programme on European Urban Allotments), demonstrating the advantages of the temporary occupation of urban land with – but not only – UA projects. This is a policy that has been implemented already across Europe (Caputo et al., 2016). It is worth noting, however, that under the Temporary City model the CPULs network of green spaces materialises not in a planned fashion, but rather with a spatially random occupation of the public space on a temporary basis. This happens with community groups enacting their right to the city, while at the same time coming to a compromise with the system of land use and ownership of the neoliberal city. It is a strategy that sees urban nature as mobile, in continuous change.

#### **4. Discussion**

This section draws on the analysis of the urban models to identify long-term aims that can serve as a conceptual direction to all UA movements and catalyse change towards a higher integration of UA and the built environment. Such aims may seem unattainable in the short-term but their aspirational pull can be strong. In terms of purpose, the von Thunen's model is the clearest attempt to use agriculture in order to combine economic outputs, self-sufficiency and spatial organisation. The economic dimension is one that can unify all urban stakeholders since a thriving economy is desirable by all, although at present the globalised economy is not just or equitable. The long-term challenge for UA movements will be to demonstrate that UA can contribute to a fair economy and greater efforts should be channelled in this direction, while pursuing at the same time all the other interests that motivate urban farmers. Von Thunen's model was still functioning in several cities within rural regions in Bulgaria, Spain and Finland (Sinclair, 1967), at a time (1950s – 1960s) when agriculture was an important part of the economy and as such deeply connected with the urban life. Such a model could not be easily applied in an age in which the building industry accrues high returns to investors. However, it is worth considering that a number of economists are proposing a model of land tax that can mitigate the disproportionate gains that speculative building practices generate (Adams, 2015), thus offering alternatives to land value dynamics – which play against an urban agricultural use of land - that may be pursued in the future. A key factor that is today functional to sustain economic growth is technology. Technology, however, can be also used in community-based UA in order to become competitive and resource efficient. Across Europe, for example, a few UA social or for-profit enterprises produce crops and farm fish with aquaponics (see. [www.growup.co.uk](http://www.growup.co.uk); [www.urbanfarmers.com](http://www.urbanfarmers.com); [www.bristolproject.uk](http://www.bristolproject.uk)) using technologically advanced systems. Hydroponics, in particular, is already explored by some community groups as a resource efficient, space efficient way of growing food in dense cities with scarcity of green areas (Fecondini et al., 2010). Technology can therefore not only stimulate the economic dimension of UA but also offer new spatial solutions to scale up UA within dense urban environments. The power of UA to create jobs is at present being explored (see Sustain, 2011), although not at the scale required to reach a critical mass.

In terms of space, CPULs and the Temporary City show that spatial arrangements for UA must be networked and must adapt to local urban conditions. In fact, the deployment of resources and the political will necessary to implement city models such as the Garden City and von Thunen's city seem currently unattainable. This has several implications. Firstly there can be no spatial model (e.g. Garden City and von Thunen model) to be applied universally; depending on the existing conditions, cities will adopt different forms of UA and regenerate their public spaces accordingly. In recent years, spatial and organisational experiments in UA have gathered pace and many solutions have now been implemented (see Caputo et al, 2016) which constitute a catalogue of possibilities. Secondly, the temporary existence of spaces for UA may be a condition of a future modernity in fluid change, thus requiring continuous adaptation. In this light, Németh and Langhorst (2014) point at the advantage that a temporary land use can bring in terms of fast implementation of novel ideas facilitating innovation and transforming the city in a living laboratory. From a different perspective, Alfasi and Portugali (2004) outline the advantages of an urban model based on the Just-in-Time production and supply, post-fordist model, in which supply is determined not by central city plans but by actual bottom-up needs. This would require a regulatory framework that enables use when needed within some established shared finalities (e.g. ecological limits). In this perspective, urban nature transcends permanence too, albeit not in essence but merely in spatial arrangements: within a shared future vision of urban nature, UA can take several forms and amplitude according to varying needs.

In terms of actors, UA today requires a collective dimension. To this end, experiments such as the Garden City are quite telling, in that reliance on individual gardens and some communal spaces to grow food have been a short-sighted solution, resulting in the suburban model of house and (beautified) garden. The critical stance of Jane Jacobs (1992) to the Garden City points at the lack of vitality of this model as opposed to the compact, mixed use city. If it is inevitable for the future of the city to be compact, UA must be developed between and within buildings, and become spatially strategic. It must be stressed that this argument does not exclude conventional food gardens, but rather complement these with new typologies of cultivation that come to term with the spatial complexity (and constraints) of contemporary cities. This objective, however, requires collective, rather than individual efforts. A collective effort – as opposed to the practice of gardening undertaken individually – requires policies advocating and facilitating community enterprises, for example. However, collective interest in UA may not expand unless the techniques, values and meaningfulness underpinning UA are not embedded in education. The teaching of urban ecology as one of the essential component of cultural systems should be another aim for a UA movements. Barthel et al. (2015) (see also Barthel and Isendahl, 2013) find that the allotments can function as a repository and a place of knowledge exchange of an ecological memory that is endangered by the progressive cultural detachment of cities from nature. It can be argued that in a future city we must transcend this dichotomy (city and nature) and learn about urban ecology as a system that does not reconcile nature and cities, but becomes a second nature, not so much in the sense defined by Lefebvre (1991), but rather as a biophilic transformation of the city.

## 5. Conclusions

The discussion section outlines some concepts for a future city that has its heart UA practices. The rationale for this identification is based on the risk, highlighted by Srnicek and Williams (2015), that the fragmentation of aim and objectives of the many individuals, groups and enterprises that daily practice and promote UA may be both an asset (since it caters for the wide diversity of interest of urban farmers while addressing) and a liability. Without a unifying vision, UA projects may not be understood by all stakeholders and loose traction. To this end, the article has identified some unifying aims that may engender a paradigm shift. These are economy, collective dimension and spatial adaptability. It is important to note that the article offers an initial contribution to the effort of elaborating such aims. These are not new, but rather part of an ongoing debate. What is new is the need, which the article advocates, to enhance their significance (in research and practice) while viewing them in a systemic perspective. Arguably, further research is needed to imagine the future of UA. One of the contribution of the article is to advocate such a research.

## References

- Acton, L. (2015) *Growing Space: A History of the Allotment Movement*. Five Leaves Publications.
- Adams, M. (2015) *Land: A new Paradigm for a thriving World*. North Atlantic Books
- Adams, D. and Hardman, M. (2013) *Observing Guerillas in the Wild: Reinterpreting Practices of Urban Guerrilla Gardening*. *Urban Studies* X, pp. 1-17.
- Alfasi, N. and Portugaly, J. (2004) Planning Just-in-Time versus planning Just-in-Case. *Cities*, Vol. 21, No. 1, p. 29–39, 2004
- Barthel, S., Parker, J. and Ernstson, H. (2015) Food and Green Space in Cities: A Resilience Lens on Gardens and Urban Environmental Movements. *Urban Studies* 52(7), pp. 1321-1338.
- Barthel, S. and Isendahl, C. (2013). Urban gardens, agriculture, and water management: sources of resilience for long-term food security in cities. *Ecological Economics* 86, pp. 224–234.
- Bell, S, Fox-Kaemper, R, Benson, M. Caputo, S, Kaeshavarz, N, Noori, S. and Voigt, A. (eds) (2016) *European Urban Allotments*. Routledge.
- Caputo, S, Schwab., E. and Tsiambaos, K (2016) Emergent Approaches to Urban Gardening, in Bell, S, Fox-Kaemper, R, Benson, M. Caputo, S, Kaeshavarz, N, Noori, S. and Voigt, A. (eds) (2016) *European Urban Allotments*. Routledge.
- Certomà, C. (2011). Critical urban gardening as a post-environmentalist practice. *Local Environment* 16 (10): pp. 977–987.
- Colasanti K. J. A., Hamm, M. W. & Litjens C. M. (2012) The City as an "Agricultural Powerhouse"? Perspectives on Expanding Urban Agriculture from Detroit, Michigan, *Urban Geography*, 33:3
- Crouch, D. and Ward, C. (1997). *The Allotment – Its Landscape and Culture*. Nottingham: Five Leaves Publications.
- Fecondini, M., Damasio de Faria, A.C., Michelon, N. , Mezzetti1, M. , Orsini, F. and Gianquinto, G. (2-10) Learning the Value of Gardening: Results from an Experience of Community Based Simplified Hydroponics in North-East Brazil. *Proceedings 2nd International Conference on Landscape and Urban Horticulture*.
- Girardet, H. (2004) *Cities People Planet: Liveable Cities for a Sustainable World*. John Wiley & Sons
- Glover, T. D., 2003, The story of the Queen Anne memorial garden: Resisting a dominant cultural narrative. *Journal of Leisure Research*, Vol. 35, 190–212.
- Ioannou, B., Morán, N. and Sondermann, M. (2016) Grassroots Movements – Towards Cooperative Forms of Green Urban Development? in Bell, S, Fox-Kaemper, R, Benson, M. Caputo, S, Kaeshavarz, N, Noori, S. and Voigt, A. (eds) (2016) *European Urban Allotments*. Routledge
- Howard, E. (1902) *Garden Cities of Tomorrow*. Swan Sonnenschein & Co. Ltd.
- Jacob, J. (1993) *The Death and Life of Great American Cities*. New York: Random House.
- Lefebvre, H. (1991:1974) *The production of space*. Wiley-Blackwell.
- Keshavarz, N. and Bell, S. (2016) A history of urban gardens in Europe, in Bell, S, Fox-Kaemper, R, Benson, M. Caputo, S, Kaeshavarz, N, Noori, S. and Voigt, A. (eds) (2016) *European Urban Allotments*. Routledge.
- Kitsikopoulos, H. (2003) Urban Demand and Agrarian Productivity in Pre-Plague England: Reassessing the Relevancy of von Thünen's Model. *Agricultural History* 77(3), pp. 482-522
- Koopmans, M. E., Mettepenningen, E., Kunda, I., Keech, D. and Tisenkopfs, T. (2017) Creating Spatial Synergies around Food in Cities. *Urban Agriculture and Regional Food Systems* 2, pp. 1-9.
- Németh, J. and Langhorst, J. (2014) Rethinking urban transformation: Temporary uses for vacant land. *Cities* 40, pp. 43-50.
- Sinclair, R. (1967) Von Thünen and Urban Sprawl. *Annals of the Association of American Geographers* 57(1), pp.72-87.
- Srnicek, N. and Williams, A. (2015) *Inventing the Future: Postcapitalism and a World without Work*. Verso.
- Sustain (2011) *A Growing Trade: A guide for community groups that want to grow and sell food in our towns and cities*. Sustain.
- Travaline, K. and Drexel Engineering Cities Initiative , Drexel University , Philadelphia , PA , 19104 , USA Hunold, C. (2010) Urban agriculture and ecological citizenship in Philadelphia. *Local Environment* 15(6), pp. 581-590.
- Vejre, H., Eiter, S., Hernández-Jiménez, V., Lohrberg, F., Loupa-Ramos, I., Recasens, X., Pickard, D., Scazzosi, L. and Simon-Rojo, M. (2015) Can Agriculture be Urban? in Lohrberg, F. L., Licka, L., Scazzosi, L. and Timpe, A. (eds) (2015) *Urban Agriculture Europe*. JOVIS Verlag
- Viljoen, A. (ed) (2005) *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities*. Architectural Press.

Wakefield, S., Yeudall, F., Taron, C., Reynolds, J. and Skinner, A. (2007) Growing urban health: Community gardening in South-East Toronto. *Health Promotion International* 22, pp. 92-101.

---

## Political agroecology in Crete

Kostantinos Christodoulidis

Architect, independent researcher (Faux Paradis, Chania, Greece)

Email: info@fauxparadis.net

---

**keywords:** political agroecology, community-based market networks, autonomy, Crete, Greece

---

### Abstract

*This paper will explore the existence of political agroecology in Crete. It will approach the issue through the empirical study of two projects: "O.K.", an agroecological producers' community-based food market network in the city of Chania and "Faux Paradis", an entrepreneurial /design/research project that establishes trade of processed goods from rural Greece to European urban markets. After a brief description of the two projects, it will introduce a theoretical study on political agroecology and later approximate its particular manifestation in the Europe's Southeast island. Finally, it will contemplate on the relation of resourcification, the reading of nature as resources, and resourcefulness, the way political agroecology can be inventive and integrative with new processes of urbanization. It is believed that, what Gonzalez de Molina (2013) asserts, that political agroecology should scale up to engage the broader public instead of remaining in "islands of success" of dispersed agroecosystems, is extremely far from the reality of Crete (and Greece), a place that is actually quite hostile to the discussed imaginary shift from resourcification to resourcefulness. Nevertheless, the paper concludes in that political agroecology is scale invariant: it exists as long as it thematizes, visualizes and strives to practice the above shift. And although such an urge, to regenerate food systems that permeate urban and rural territories is deemed entirely valid, in such a case study it is only remotely expected, as neither such insular examples abound, nor is their success a given.*

### I. Introduction

Although the conception of sustainable food systems is certainly gaining momentum, the issue of economically accessible, ecologically grown quality food has yet to be seriously implemented, bridging the gap between vision and continued practice. It comes as no surprise, that existing political and economic strategies tend to focus on the centralized, monocultural, market-oriented agri-business. This agricultural production, along with food science, food policies and marketing, shape consumer "needs" - or behaviors, directing both diets and crops towards a system that resembles technological production, based on reductionistic approaches instead of being informed and shaped by local climate and food culture, the rhythms of annual crops, alimentary values and culinary traditions.

This paper will explore the issue of political agroecology in Crete. It will approach the issue through the empirical study of two projects: "O.K.", an agroecological producers' community-based food market network in the city of Chania and "Faux Paradis", a food processing/design/research project that establishes trade of processed goods from rural Greece to the European urban markets. After a brief description of the two projects, it will introduce a theoretical study on political agroecology and its particular manifestation in the Europe's Southeast island. Finally, it will contemplate on the relation of *resourcification*, the reading of nature as resources, with *resourcefulness*, the way political agroecology can be inventive and integrative with new processes of urbanization.

For Gonzalez De Molina, *political ecology is an approach for studying socioecological change in political terms*, and, in turn, *political agroecology should "develop ways to apply these methods and findings in addressing socioecological change in agroecosystems"* (Paulson et al. 2003, 208) . But *political agroecology is not only a research subject. It has another practical dimension closely linked and considered as a central goal: achieving agrarian sustainability.* (Gonzalez De Molina, 2013:50). In that regard, the research itself becomes an object of investigation. How can a research aid a community of practice, and what kind of research would that be? The answer is not definite, but the question nevertheless orients us towards the methodological approximation of this paper: to oscillate between a research *about* the community as a contribution to the academic discourse on political agroecology and a research *about* "academic" political agroecology as a contribution to the community.

## II. O.K. group

*OK (Omada Kalliergiton, meaning Cultivators' group) came together in spring 2016, as a response to an open call to small ecological producers, in the context of specific social circles in the town of Chania. This meeting resulted in a weekly assembly that went on for several months before becoming what it is now: a community-based food market network, of small-scale, agroecological producers of raw and processed foods. The distribution of the products is conducted by the producers themselves at a weekly basis and is, at the present time, autumn 2017, delivered to around 50 households. The decision making process continues to be general assemblies. In the context of the group there emerges a series of parallel activities, such as collective work, mutual and peer-to-peer learning on farming practices, new products, political conversation and fun.*

*With the term “ecological agroproduction” we refer to a direction of empowering biodiversity and soil fertility with regenerative methods of polyculture. We prefer traditional, self-pollinating seed varieties and pursue their adaptation to local conditions, which, in due time, can ensure the network’s availability to good seeds without intermediaries. For the nourishment and health of the plants, we use custom formulations, made from locally accessible natural products. In cases when the use of commercial formulations is unavoidable, then they will be certified organic.*

*For stock-breeding, food processing and beekeeping, ecological production refers to similar aims: the quality of animal feed and prime materials and, if possible, their own ecological production, the abstinence from industrial, chemical aggregates and, in general, whatever ensures the quality of the final product in each sector. Within these guidelines, everyone develops his own approach to farming or processing, which result in a variety of knowledge and taste.*

*With the term “Small scale producer” we refer to those who can manage their production themselves or via cooperations, without basing their production in waged labor. Within the contemporary condition of devaluation of labor in the primary sector, the group aims to increase self-sufficiency, of food, labor and livelihood, which is coupled with a decrease of monetary needs. In short, this project constitutes a collective endeavor - but also a composition of different views - on the intermingling of food production, ecology, politics, cooperative relationships and livelihood.*

*OK, network of ecological producers of Chania, 2017*

This chapter, beginning with the above text in which the OK group presents itself, provides a brief description of the structure of the group at the current time, as well as some preliminary quantitative data. A documentation of the farms and the farming practices, or of the processes of agricultural and cultural production, or the above for more groups operating in Crete, would consist of a long-term project that could be conducted in the context of a future doctoral study. At this starting point, the issue of political agroecology in Crete is deemed to be addressed at the level of subjectivity. This group is comprised of people from different backgrounds and social strata, with different views, methods of production, long-term plans and skill sets, set in a contemporary interaction of urban and rural territories. This hybridization is considered to account for a great deal of the group's potentialities and challenges, and is a research object in itself. To that end, a qualitative, open-end questionnaire was created, by the means of which the author held live interviews to four out of the ten members of the OK group. The sayings of the persons provide a snapshot of the group's discursive instances, which have influenced – or were sometimes incorporated into - the paper, while the full transcript can be accessed online (Faux Paradis 2017), serving as an appendix.

Introducing the landscape of “political agroecology in Crete”, Chania is the second largest city of Crete (population around 50.000), after Heraklion (population around 150.000). There are several similar clusters of agroecological producers in Crete, most notably in Heraklion, (“Apo Koinou”, “Melitakes” and “BeCollective” farming and food processing social enterprises, the Integrated Cooperative of Heraklion etc), as well as several solitary ecological farmers that however interact with the loosely-knit, broader network of ecological farmers and alternative consumers. Apart from that, most organic farmers (as almost all farmers in Crete) cultivate olive groves and, in the case of Chania, oranges and recently



avocados. There aren't many professional farmers of vegetables, whereas organic vegetable farmers are so few that they are in most cases known to each other. Likewise, professional organic beekeepers and stock breeders are also uncommon cases, whereas cases of ecological food processing are far more abundant, to the point of saturation.

On the group's process: Once a week all producers meet at a warehouse situated near the entrance of the city from the national road. They bring the products and arrange them in "baskets" that correspond to the orders made during the week on an online spreadsheet. 5% of the profits are kept as a common fund for operational costs, emergencies or investments. The process lasts for about two hours and is often accompanied by a short, informal assembly. Each producer is responsible for the deliveries to the people he has invited in the network. In most cases, he delivers himself, but optimizations of routes based on distance have also occurred, and actually encouraged, as in that way different producers get to meet different consumers.

From the network's day one, its maximum capacity has been reached. There were quite a lot of the farmer's acquaintances wanting good food and just a few farmers, most of them just now shifting to ecological production and taking it more seriously. That being said, one year later, sales and production has almost quadrupled (from around 100Euros in 28/07/2016 to around 400 Euros in 29/09/2017) and the number of different products has more than tripled, with 24 products in 28/07/2016 to 83 in 29/09/2017), while two new members have been added during that time.

The distance between the farms and the warehouse varies from 3 to 25 kilometers, with a sum of 90 driven kilometers (one way).

Prices are set collectively, based on the concept that quality is to be accessible, resembling more to those of the conventional than the organic food. Also, prices remain fixed during the season, as opposed to conventional market prices that fluctuate on the basis of early production (season before the crop becomes widely available), supply and demand etc. For example, the kilogram of tomato that costs from 0.50 to 1.80 at Lidl, 0.80 to 2.20 in conventional grocery stores and from 1.20 to 3.60 in organic shops, is sold by the group at 1.50. The quality of this "ecologically produced" tomato is believed to be "better than organic", as many a times organic farmers simply change the aggregates they use to ones that are certified organic, without essentially transforming their farming practices to agroecological.

Moreover, with ecological food production as a starting point, there have occurred some parallel initiatives (and many ideas for future initiatives), like the organization of public events to initiate dialogue about food, building collective compost units and collect the organic waste from the consumers (along with the new deliveries), collectivize work on labor intensive tasks etc. A promising example of such a parallel activity is to cook food. Two subsequent projects of catering services have been conducted by two of the OK members and some new people, providing cooked food to the students of a French school of ecological building that arranged to have workshops on earthen plasters in Crete, in the spring and autumn 2017. This has given the opportunities for new "content", to create meals with the best materials around and propose their uses in dishes – which is especially important for some of the "weird" processed products (like the carob syrup) that, whether or not they were present in Mediterranean culinary tradition, are now outside of the everyday food culture. It also gave a respectable remuneration to both the cooks and the organizers, ultimately shouldered by the French Government<sup>1</sup>.

Summarizing, the existing distribution network constitutes a foundation on which investing more time and money in a farm (or some other form of ecological food production) makes more sense than a year ago, while its potentialities have not yet been fully explored – let alone saturated. The stability it generates permits more experimentation, customization of member's roles and more iterations of feedback cycles between the emerging community of producers and consumers. Challenges and bottlenecks of up-scaling production differ from one case to the other, but are, at all cases, influenced by access to reliable equipment, investment funds, available time, knowledge, and collaborations between members.

---

<sup>1</sup> Also, this school of "eco-construction" has proposed a more in-depth collaboration, possibly on the Erasmus Plus platform, that would provide funding both for hosting visitors and for the group's members to travel and learn new things abroad. Such a development could also result to the creation of on-farm habitations, which would greatly impact the producers' lives and the group's logistics as a whole, as well as integrate the research on the relationship of agroecology with ecological architecture.

In the current state, none of the producers are economically self-sufficient through their production. As seen on the “Q&A with OK” (Faux Paradis 2017), members' alimentary self-sufficiency ranges from 50% to 100% whereas economic self-sufficiency ranges from 20% to 100%, with the weekly earnings ranging from 50 to 150Euros.

### III. Faux Paradis

*Insofar as agroecological systems are basically polycultures, small poly-farms provide small quantities of a diverse range of high quality goods. To harness this potential in market terms, complementary to the small-scale, semi-local distribution of fresh goods on demand, there can be an agglomeration of goods of many such farms to a processing “node” that will be rendered eligible for conventional, high-end shops and export. [...] So, in this hybrid potential, any transaction towards the conventional market is conceivable to the community as an export (regardless of whether a state border is crossed), with money as signifier of “access to goods” imported from the conventional market (goods such as gasoline, computers, internet etc). Symmetrically, any skill or localization of production that supports the local food and supply chains is essentially an “import – substitution dynamics”(Jacobs in Delanda 1999) at work. (Christodoulidis 2017)*

“Faux Paradis” is an food processing/design/research project that establishes trade of processed goods from rural producers to urban markets. It presents a series of alimentary products, in small quantities, with materials grown by agroecological farmers or harvested from the wild. With a background in architecture, Faux Paradis is also about design: “ecosystem as habitat” is a methodology to combine architecture with agroecology and ecological building design (natural building, bioclimatic architecture). Finally, it's about theory, as in this independent research.

It exported it's first batch of products to the distributors “Farmers Around the World” in Geneva, Switzerland in summer 2017 and regularly delivers products in two fair trade, cooperative shops in Athens, along with personal deliveries. Having just started in 2017, it's earnings are roughly 100Euros per month (sales in Athens 50%, Switzerland 40%, OK network 10%).

Faux Paradis uses the food processing and legal infrastructure of two local seasoned businesses that have a certified food processing unit and conduct formal trade and exports. Whereas this cooperation helped to achieve minimum prior investment and know-how, another such case is the Social Enterprises in Heraklion, which now cooperate between them in order to open an authorized processing unit of their own.

### IV. Political agroecology

*The link between politics and agroecology is not new. Many authors have demanded the need for socioeconomic structural reforms in order to be able to achieve sustainable agrarian systems (Buttel 1997; Rosset 2003; Levins 2006; Holt-Giménez 2006; Perfecto et al. 2009; M. Altieri and Toledo 2011). (De Molina 2013)*

*Same with regenerative ecosystem design, in the heart of the agroecological strategy is the holistic idea of a robust agroecosystem, shaped after the natural, local ecosystems and exhibiting tight nutrient cycling, complex structure with enhanced biodiversity and soil regeneration. However, what is considered crucial in this specific tradition of thought is the combination of practical knowledge with small placeholders and grassroots social movements, which connects agroecology with a historicity of resistance, more equitable distribution of resources and self-determination of marginalized communities, through concepts like food justice, food sovereignty and food self-governance – most notably, in Latin America (Christodoulidis 2017)<sup>2</sup>*

---

<sup>2</sup> Also, “political agroecology”, or the politicization of agroecological research has been expressed in the collective publication no.37 in the series “Agroecology and Sustainable Food Systems” (Taylor and Francis, 2013 – current), along with complementary views on the different “agroecologies” and the controversies between a merely “scientific or technocratic” approaches, as opposed to a “transdisciplinary, systems-based, participatory and action-oriented approach” (Mendez et al 2013) with a political / social prism.

One very important issue that has to be addressed in regard to the political agroecology as a tradition of thought are the significant differences between Latin America (where it sprung) and the European South. Even though there is an ongoing economic crisis, with severe austerity and impoverishment, both material and cultural capital available to a person or community has been - and often still is - very different from actual post-colonial conditions. In fact, “agroecologists” in Greece (a dubious category, to begin with), as indeed the members of the aforementioned groups in Crete, come from a variety of rural and urban backgrounds, social classes and economic metabolisms, personalities and interests. Agroecology thus consists primarily of a cultural and political interest – which of course, is also connected with the actual economic exigencies through yield and income, as well as with the everyday life it ensues. “In the West, the adoption of an agroecological approach should, therefore, give rise to a different strategy based on degrowth in their food systems” (Infante Amate and González de Molina 2013 in González de Molina 2013).

It is a common aspect in the sayings of the OK members that ecology, agroecology, and more or less anything that touches livelihood is inherently political, dealing with the common, basic needs whose satisfaction lies at the intersection of economy and ecology. However, the use of the epithet *political* explicitly accentuates a cultural production, *within* but also *beyond* the agricultural production. To avoid misinterpretation, this underlining of the political dimension of agroecology, in place of the *social* or *communal* or *playful* dimensions, does not suggest a value system of comparing their importance, but suggests that the political dimension is more fitting to be approached theoretically, as the particular thematization that poses ecological and economic questions as primarily *political* and *public* questions. Yet, who is the political subject and in which scale of the public realm? Is it an ecological farmer, or the inhabitant of a city? In this context of this paper, the answer seems specific: the political subject is a member of the networked community in the urban and rural geographies of Chania.

Cultural production “within” agroproduction corresponds to the political principles like mutuality, solidarity and justice, that are embedded in the practices and that are also discussed and communicated as such. This narrative constitutes a cultural product, or a cultural value embedded in an alimentary product. However, in this case, political values are understood in the sense of a trans-personal relation in the communal scale, in contrast to a hyper-personal public subject in the civic scale. In other words, the cultural value of “ecological” production and “economically accessible quality food”, and the trust it entails, and on which is based upon, is to be experienced, challenged or confirmed in everyday life in the closely-knit social fabric of Chania - where it concerns people that have met and thus, at a degree, filtered through some personal contact. That being said, there is neither a directive or criteria, nor a distinct pattern of consumers: locals and students, young and old, wealthy and not-so-wealthy, politically engaged and not-so-much.

The political dimension “beyond” food production would refer to activities indirectly connected with agroecology, like right of peoples to food sovereignty, land, seeds, water, biodiversity, food taste and nutritional value, self-organization and, finally, autonomy. Within the OK group, the will to externalize the group's problematique exists, and would entail the thorough interaction with other groups or individuals. What has been largely debated is who would be approached: the consumers, non-organic farmers, immigrant land workers, schools, other similar groups - and at what ends: cooperation, knowledge exchange, empowering ecological and political consciousness or just open-end parlor. However, such projects are yet to be implemented, as the mere exigencies of agroproduction deem sufficient.

So, for the time being, the political impact boils down to the economically accessible, ecologically produced food: within the landscape of the economic crisis, the conceptualization of quality, ecology and cultural-political values in food as a right, rather than a luxury, is paramount.

However, much like Hemenway (2010) expresses sustainability, “as the mid-point of degeneration and regeneration”, economic sustainability aiming to maintain subsistence over the long term, cannot be everything political agroecology is about. Likewise, the argument of Manuel Delanda on DeVries' historical account of “peasant” and “specialization” models, discussed in previous papers (Christodoulidis 2015 and 2017), acknowledges that farmers in 17<sup>th</sup> century Central Europe that themselves founded

trade routes with urban markets, thus reaping the entire benefits of their sales, proved more resilient to land grabbing than those aiming at self-sufficiency. (Delanda 1999)

In that regard, the research content of the interaction of Faux Paradis with O.K. is the institution of a kind of collectivized entrepreneurship that, parallel to the community-based market-network, aims to cope with the bureaucratic and entrepreneurial conventions so as to “export” ecologically grown processed foods with long shelflife to urban markets with a high buying potential. Urban consumers have higher probabilities to value the quality of the products, and are more likely to be positive to the mediative practices that promote a “political agroecology”.

In other words, this approach proposes the integration of entrepreneurial aspects as operational tools, the functionality of which is to resolve resurgent problems of efficiency and profitability, but also expand to include equity of time and labor, more advanced guidelines in hygiene, taste and appearance, strict deadlines etc. This step towards “standardization” is deemed helpful, although there may be doubts that it will jeopardize its political integrity. However, for such a group, the goals: expanding agroecological production, the decision making structures: unmediated participation of members, and, more importantly, the imaginary constitution of its self reflection: a collective for the self-organization of labor, can be said to substantially differentiate from a “real” enterprise of “alternative” business.

For a low-income urbanite, these “exported” quality products may indeed lie beyond economic reach - or indeed constitute a luxury. Interestingly, however, for the community-based market network, this kind of “market exclusion” happens in reverse: the ones that get the chance to access these goods do so only through interpersonal relations. In other words, it's social and not financial capital that renders quality food accessible, as is the overall goal to exclude all the proponents of the mainstream market : externally set prices, consumer attitude, taxes, permits etc. - and for that, the group's priority should be to enhance its interaction with the consumers and establish two-way feedback on the issue of food autonomy.

*As there is transition from conventional or organic farming to the multi-layered resilience of agroecology, there is transition from conventional or niche markets to the multi-faceted resilience of autonomy: the project of collectivization of structures such as labor, buying potential, investments, spatial, legal and financial stability etc (Christodoulidis 2017).*

The case study discussed until this point has been exclusively concerned with empowering political-economic aspects of agroecology from the private sector. That is not without reason. Regarding change brought about from state institutions, the particularities for the different agents of what we hereby call “political agroecology” in Greece, is that change towards something better, what here is discussed as “resourcefulness” - will simply not happen. In the case study of the group, it is common belief that Greek policies do not favor the small ecological farmer. These farmers claim that subsidies and certification systems are almost exclusively oriented to facilitate industrial, conventional agriculture and expensive certifications, and in reality discourage or exclude polyculture and crop flexibility, exclude self-pollinating seed varieties and in general abstain from integrating ecology in agroproduction, or encouraging such an integration from the farmers themselves. At the same token, food processing does not enjoy any benefits from being ecological and remains inaccessible due to expensive infrastructure, like an authorized processing unit. Moreover, the distrust on political institutional agents on ecological matters is derived from a rich history of regulations in markets that subsidies and fiscal incentives during the 80's (when ecology was not even in the Greek horizon), that finally augmented market imbalances that it firstly (or supposedly) aimed to address. Also, on instances of extracting social capital on the public image of ecological transformation, while the hard issues that would promote social equity and access to resources remained unapproved. In any case, ecological farmers remain a marginal category and have not once been “target groups” of agrarian reform, and thus remain doubtful towards public policies, while they often separate themselves from conventional farmers in terms of ethos, class consciousness and collective action. Needless to say, the current regime of austerity further oxidizes the relation of Greek grassroots movements with state power.

Within this context, the role of the state and social movements becomes fundamental, as does the decision-making process of democracy itself. This raises the question of how to achieve a strong

presence in government to promote public policies that favor rural sustainability, either alone or by partnering up with other social and political forces. (Gonzalez de Molina 2013:56)

Concluding, before the - minuscule but emerging - political agroecology in Crete expresses itself in a wider scale of the public dialogue, it ought to solidify, first and foremost, its institution as an agent of cultural production and build on its characteristics of a social movement – of course, along with its material infrastructure that would lift off some of the exigent everyday labor and permit personal involvement of producers with other things, however important. The self-determination of such groups as agents of social reform has not been explicit: “[The group is about] common worries, values, respect towards the earth and its fruits and the aim to... well, to search for its aim” (Faux Paradis 2017:Q1). Looking at the city as a field of political struggle, and the outskirts as yet another field of political struggle, that in this story are interconnected via food and value systems, political agroecology in Crete may indeed reach a point that, Gonzalez De Molina proposes, will play “the game of alliance between different social forces to build government majorities”, or maybe, via an antiauthoritarian trajectory, it will fulfill a long-term project of autonomy as a collectivized network of ecosystem – habitats. And in some regards, the Greek conditions are so poor in “commonplace” ecological transformations, on both technological and social levels, from both institutional or collective agents, that there is a lot of room towards tangible betterment and work to be done that could be regarded as obvious and preliminary in other European countries.

## V. Resourcification and resourcefulness

*We are not what you would call colonized or civilized into your ways. We live in a circle. The reindeer die and we consume their flesh and when we die, they consume our bones.*

*Elder Atja of the Saami<sup>3</sup>*

Many a times, we refer to nature: As a way of doing things, as way of life or as something one is being part of. Also, as a quality of the rural environment: “I work close to nature”. At other times, nature is like a codeword to refer to the differentiation from the conventional, industrial, mainstream and modern modus operandi: “I farm naturally”. Or, the same, but as a question: “what is natural farming<sup>4</sup>?”, often answered by a measure of distance from a farming vision: “We still have a long way to go to farm naturally”. Last but not least, as an object of philosophical inquiry: “Nature is the opposite of culture, or else it means nothing”.

*The word “nature” is used here to encompass two somewhat different clusters of ideas: on the one hand, the term nature is used to denote a menagerie of concrete forms ranging from the human body to parks, gardens or complete ecosystems; and on the other hand, nature is evoked as an ideological and metaphorical schema for the interpretation of reality. In practice, however, these abstract and concrete elements are often interwoven to produce a densely packed urban discourse within which the origins and implications of different conceptions of nature are often afforded only cursory reflection. (Gandy 2006)*

Likewise, the idea of nature is interwoven in the narratives of ecology, which could be “culture's way of viewing nature”. Agriculture is harnessing “nature's” potential to provide nourishment, as a result of material and energy flows that run across the ecosystem. Agroecology essentially suggests a “more natural way of farming”, linked to distinct methods that have existed before or formed throughout modernity.

---

<sup>3</sup> <http://rabble.ca/blogs/bloggers/vegan-challenge/2014/04/indigenous-fight-against-colonial-veganism>

<sup>4</sup> To a Greek ecological farmer, the term “natural farming” could refer to Fukuoka, who is relatively well-known in Greece due to the existence of the school of Natural Farming in Edessa, northern Greece, in the farm of Panayiotis Manikis, who is also its most notable founding member. He also visited Chania in spring 2017 for a project of “seedballs”. In any case, Fukuoka's teachings constitute merely a contribution in the discussion on what natural farming would be, rather than become a direct reference to his concept and techniques.

*So the book of nature then remains for the most part a readerly text. Different human beings will observe its patterns differently; they will choose to accentuate some while deciding to ignore others. (Luke 1999:3)* In this somewhat chaotic inquiry, Luke's account of eco-managerialism provides – or sums up – a series of notional tools to approximate the interaction of nature and culture, through the theoretical standpoint of political ecology:

*Where life, labour, and language can join in a discourse of environmental studies, one finds another formation of power knowledge which shows how man and his being can be concerned with the things he knows, and know the things that in positivity determine his mode of being in highly vocalized academic constructions of "the environment." Instead, the environment emerges in part as a historical artifact of expert management that is constructed by these kinds of scientific interventions. And in this network of interventions, there is a simulation of spaces and intensification of resources and incitement of discoveries, and a formation of special knowledges that strengthen the control that can be linked to one another as the impericities of nature for academic environmental sciences and studies. And probably in many ways, the key impericity here I would say, is the process of what I call the resourcification of nature. How does nature get turned into resources? (Luke 1999:2)*

Luke traces the logic of resourcification within environmental discourse and education, in which he accentuates the point where discursive processes transform nature into natural resources. This is reflected on the political legitimization of the management of environments, or state and social institutions, that regard their objective to facilitate economic growth as valid or useful. He distinguishes different versions of extracting natural resources and classifies them as eco-managerialisms. One such example is his description of the passage from sustained yield to “renewables managerialism”, that was coupled with the passage from a vision of nature as “a static, depletable storehouse” to “a huge cybernetic system” of inputs and outputs.

From an “anthropocentric” standpoint, that is, any standpoint that focuses on the management of resources, as opposed to an “ecocentric” standpoint that would focus on the human understanding of nature and society's adaptation to nature, the “managerialism” of nature as a sum of resources seems to self-perpetuate itself, changing approaches, methodologies and names, but never having to question, in any subtlety, the conflicts that emerge between the ecological and the political. Therefore, in this theoretical study, it must be held as debatable, whether nature can be conceived without resourcification, or what discursive processes could reinvent nature and shift human behavior towards its material aspects into what Luke refers to as “post-extractive”. Nevertheless, what is definitely more conceivable is a dialectic between resourcification and resourcefulness.

The latter term has been used by the conference's disclaimer, with reference to Derickson and MacKinnon (2013), “as a particular way of intending the concept of ‘resilience’” - in short, as a novel, equitable and ecocentric process of urbanization. It's general meaning, *having the ability to find quick and clever ways to overcome difficulties* also invokes a link with economies of affluence<sup>5</sup>. On the other hand, resourcification resounds the systematic exploitation – and impoverishment – of both ecosystems and social majorities of their inhabitants. However, the most theoretically dubious component of this relation of terms is the middle word “and”. Does it signify synthesis - resourcification *along with* resourcefulness, antithesis: the one *versus* the other, or merely observes that resourceful is visionary *whereas* resourcification is pragmatic?

Another type of question rises on the matter of the eco-political subject: Who is resourcifying nature and who is being resourceful in respect to nature, and in what ways? “The ecological dimension lies in the difference between exploitation of resources of nature and being part of the cycles of nature. - Maybe the word is *utilization* of resources...” (Faux Paradis 2017:Q3). Regardless of the exact terms - what is “exploitation” and what “utilization” - the task at hand is to establish an “ecocritique”, in touch with the historicity of that discourse, so as to distinguish the material and immaterial characteristics of the one

---

<sup>5</sup> The hunter-gatherer tribes that have been historically framed as savage are thought to have been affluent by Clastres

from the other, and link them with different “processes of subjectification”(Guattari 1989) of a holistic understanding of ecology as a way of thinking that permeates the physical, mental and social dimensions of the world.

*Because in many ways the political question, "Who is the enemy of the environment, and who's the friend of the environment?" asks you to say, "Well what would a friend of the environment be and what would an enemy of the environment be?" and what it would quickly lead you to probably conclude is the enemy of the environment is us. The people who live pretty high on the global food chain. (Luke 1999:11)*

Even though Luke deems not to be “practical”<sup>6</sup>, the applicability of his elucidations seems to redound to the level of imaginary institution of ecology: *theory in itself is a doing, the always certain attempt to realize the project of clarifying the world* (Castoriadis 1987:74). In that sense, the “molecular” (Guattari, 1989) transformation of developing a local food economy of affluence through higher degrees of self-sufficiency – thus lowering the degree of dependance in the aforementioned *global food chain* – is necessary but not sufficient condition for the broader transformation of urban food systems. The element that is hereby proposed is the cultural production that will foster the imaginary institution of political agroecology.

*Institutions cannot be reduced to symbolic, but they can exist only in the symbolic; they are impossible outside of a second-order symbolism; for each institution constitutes a particular symbolic network. A given economic organization, a system of law, an instituted power structure, a religion – all exist socially as sanctioned symbolic systems. (Castoriadis 1987:117)*

This also becomes apparent when Gandy speaks of the “ecological imaginary”:

*Ranged against the organicist lineage of the “ecological imaginary” we can identify alternative approaches to the understanding of urban nature that recognize the cultural and historical specificities of capitalist urbanization. [...] By moving away from the idea of the city as the antithesis of an imagined bucolic ideal we can begin to explore the production of urban space as a synthesis between nature and culture in which longstanding ideological antinomies lose their analytical utility and political resonance. (Gandy 2006:71)*

Although here, Gandy is primarily addressing the urban nature, the countryside is an equally hybrid territory, in which pre-modern, modern and post-modern socioecological processes coexist and juxtapose. For example, the urbanization of nature is particularly evident in the omnipresent monoculture of olive trees that has had a very blatant impact on the Cretan landscape. Olive oil production, once a traditional crop, first up-scaled and routinized by the Venetians (Rackham and Moody 1997), was industrialized during post-war years, only to become the single most predominant element from one side of Crete to the other, through a series of political-economic factors like state subsidies and the European Common Agricultural Policy. Of course, this decentralized, polycentric cultivation, in most cases run by small stakeholders, and in most cases triggering the collective action of families, professionals or villagers for the seasonal harvesting, may indeed be an important traditional aspect of contemporary Cretan life. And, perhaps, this perpetual olive grove is better than the sea of greenhouses in Ierapetra. However, this example illustrates the olive grove as a socioecological assemblage, at once a biological entity, a designed production, a social construction and an object of politics. Seen that way, olive oil illustrates an example of a resourcification: a perennial crop that with market value and access to trade routes, wide-spread infrastructure and know-how, etc. that provides a modest income without too much “resourcefulness”. Even though it is indeed important to have access to some ecologically farmed olive oil, an ecological olive grove is not in itself about *transforming food systems* but more about providing the resources with only three months of labor, that, used wisely, could sustain the farmers while they expand their repertoire of products and practices. So, resourcefulness and resourcification are

---

<sup>6</sup> “I’m working on that I’m calling *The Poverty of Practicality*, which is a kind of distressing reaction that I’ve always gotten from people after they’ve read the eco-critique book and the capitalism and democracy and ecology book, saying, “Gee, that’s a really nice critique, but where’s the practicality to it?” (Luke 2000:1)

not meant to establish a polarity of “bad” and “good” resourcefulness. It suggest a particular thematization of balancing the issues at hand: resourcification is about short-term liquidations and resourcefu— that, however, may be what allows agroecopolitical action to be resourceful in experimenting and solidifying it's long-term goals; while at the same time condemning that, conventionally, only the former is being done, with catastrophic impact.

Nor would it be acceptable to establish a fanciful notional duet open to relativism, that would corrode the criteria for comparison between agroecological politics and agribusiness, between growth and degrowth. However, stating, organizing and prioritizing these criteria are the kind of “theoretical work” that lies in the cultural-political production such groups ought to reinstate. “Being part of nature”, or managing a farm as a socionatural ecosystem, with both it's crops and narratives as inputs to a larger socionatural system of the city, is exactly what grounds the theory, the light of the final criterion: whether farming, social and political practices coincide and persist in time.

Another issue that has to be addressed is that the more developed sector in Crete is tourism. The tourist subject is almost exclusively an urbanite on vacation, a wealthy consumer in a role where the very act of consuming becomes a cultural product. A lot more than in the city, the traditional heritage of farming, gardening and stock herding, still present in everyday life, is subjected to folklorization. A great amount of symbolic capital is derived from place marketing, a substantial amount of which is linked to food, from mundane meals in Tavernas to the gastronomic Cretan cuisine. Just as Luke's “recreationist managerialism”, “frames natural resources as preserves for recurring consumption as service amenities, positional goods, scenic assets or leisure sites.” tourism also frames cultural landscape to the same end: The visualization of upright shepherds and wrinkled herb-picking grandmothers constitutes nothing less than it's capitalization of genuineness.

In that context, the imaginary institution of “agroecology” has to colonize the existential territory of the “political”, so as to evade the “hope-marketing” that would frame itself as a sustainable Arcadia of just micro-politics, in it's quest to be inclusive, positive and hands-on. It is for this reason that the development of agricultural production is coupled with cultural production, so as to explore the “content” of agroecology, it's aesthetics and morals, it's ecological and political arguments, and a discourse through which some public actions deem meaningful, as opposed to others that are not: in short, a cultural production that will foster critical creativity. Moreover, it is this combination, of political consciousness with collective subjectivity, that forms the political and moral thresholds – if there are any – between obtaining and managing political-economic power through some selective resourcification of nature, through lawlessness, or through obfuscate, for empowering the benevolent cause of agroecology and autonomy for a social organization or a community. In that way, a robust political discourse would entail a more “resourceful” resourcification - whether conceived as a confirmation, or a deviation - implementation of the concept of a “post-extractive”, yet productive and influencing endeavor.

To conclude, what Gonzalez de Molina (2013) asserts, that political agroecology should scale up to engage the broader public instead of remaining in “islands of success” of dispersed agroecosystems, is extremely far from the reality of Crete (and Greece), a place that is actually quite hostile to the discussed imaginary shift from resourcification to resourcefulness. Nevertheless, political agroecology is scale invariant: it exists as long as it thematizes, visualizes and strives to practice the above shift. And although such an urge, to regenerate food systems that permeate urban and rural territories is deemed entirely valid, in such a case study it is only remotely expected, as neither such insular examples abound, nor is their success a given.



## VI. References

- Castoriadis, C. 1987. *The Imaginary Institution of Society* [translation of *L'institution imaginaire de la société*, 1975]. Cambridge, MA: MIT Press.
- Christodoulidis K. 2017, Agroecology, market and autonomy. [AUTONOMA] conference, Onassis Foundation, Athens Greece, 07/01/2016. <http://fauxparadis.net/theory> (Accessed Oct 30, 2017)
- Christodoulidis K. 2015, Faux paradis: Regenerative agroecology via fair trade: a political ecology perspective. *Agriculture in an Urbanizing Society Volume Two: Proceedings of the Sixth AESOP Conference on Sustainable Food Planning*, ed. Roggema, R., Cambridge University Press, pp 732-751 (Chapter 28)
- DeLanda, M. 1999, *The Nonlinear Development of Cities*. In: *ECO-TEC: Architecture of the In-Between*, ed. Marras, A. New York: Princeton Architectural Press. (Chapter 2).
- Gandy, M. 2006. Urban nature and the ecological imaginary. In: *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, eds. N. Heynen, M. Kaika, and E. Swyngedouw. London, U.K.; New York: Routledge. pp. 62-72 (Chapter 4). <https://urbanforensics.files.wordpress.com/2012/09/inthenatureofcities.pdf> (Accessed Oct 30, 2017)
- Gonzalez de Molina, M. 2013. Agroecology and politics. How to get sustainability? About the necessity for a political agroecology. *Agroecology and Sustainable Food Systems*, 37(1): 45–59
- Guattari, F. 1989a. *Les trois écologies*. Paris, France: Galilée. —. (translated by C. Turner). 1989b. *The three ecologies*. *New Formations*, 8(Summer): 131–47. <http://www.responsivelandscapes.com/readings/ecology/threecologies.pdf> (Accessed July 6, 2016)
- Hemenway, T. 2010. *How Permaculture Can Save Humanity and the Planet—But Not Civilization* [online video]. Presented at: Nicholas School of the Environment, February 12, 2010. Duke University, Durham, NC. <http://tobyhemenway.com/videos/how-permaculturecan-save-humanity-and-the-planet-but-not-civilization/> (Accessed Oct 30, 2017)
- Luke, T. W. 1999. Eco-managerialism: environmental studies as a power/knowledge formation. In: *Living with Nature: Environmental Politics as Cultural Discourse*, eds. F. Fischer and M. Hajer. Oxford, U.K.; New York: Oxford University Press. pp. 103–20 (Chapter 5). <http://aurora.icaap.org/index.php/aurora/article/view/79/91> (Accessed Oct 30, 2017)
- Rackham, O., Moody, J., 1997. *The Making of the Cretan Landscape*, Manchester University Press, U.K.
- <http://rabble.ca/blogs/bloggers/vegan-challenge/2014/04/indigenous-fight-against-colonial-veganism> (Accessed Oct 30, 2017)
- Faux Paradis, 2017. Q&A with O.K. <http://fauxparadis.net/theory> (Accessed Oct 30, 2017)
-

# Access to land pivotal in the food system reconfiguration - The case of the Rome peri-urban area

Luca Colombo<sup>1</sup>, Stefano Grando<sup>2</sup>

<sup>1</sup>Fondazione Italiana per la Ricerca in Agricoltura Biologica e Biodinamica (FIRAB), Italy.

<sup>2</sup>Pisa University, department of Agriculture, Food and Environment (DAFE), Italy.

Email: l.colombo@firab.it, stefano.grando@for.unipi.it

---

**Keywords:** peri-urban agriculture, land access, social movements, organic farming

---

## Abstract

Peri-urban agriculture is receiving a growing attention in Italy, as elsewhere in Europe. New farming initiatives proliferate, combining economic returns with socio-environmental ambitions, giving rise to an increasing demand for land by both farmers and 'neo-rural' people.

Quest for land is not just an individual endeavour. A mobilization advocating access to land took place in Rome since 2013, triggering the city and regional administrations' responses in the form of tenders to assign farmland units held in public hands. A case study was carried out few months after the assignments procedure completion, to examine how this allocation of public land actually responds to the activists' goals and is capable to trigger quality food provision, employment opportunities, peri-urban areas reconfiguration and local food system reorganisation.

The case study showed that food sovereignty and agroecological farming played a central role in the mobilisation, entrenching land access with short chains, organic farming, territorialization and multifunctionality. Interestingly, such complementary socio-technical motivations were seen by both activists and local administrations as a way to gain citizens' consensus and represented criteria for the land rental tenders.

## Introduction

Farmland in Europe is subject to competition on its destination. Availability and quality of agricultural land are key issues in determining the significance of the land use conflicts. When assessing land tenure in Europe, further to land availability, other factors should be included such as the developments in land concentration, the ongoing process of structural change of EU agriculture, the role that policies have on this process, land and 'green' grabbing, as well as land acquisitions in the name of climate change mitigation strategies, such as the installation of solar panels (Borras et al., 2016; Ploeg et al., 2015; Kay et al., 2015; Fairhead et al., 2012). These processes may have relevant effects on the availability and use of agricultural land and, indirectly, on food and nutrition security (FNS), due to changes in local land use, yields, employment, role of family farming.

These developments may be more severe in urban and peri-urban areas where the food-feed-fibre-energy production competes with urban settlements, infrastructure development and recreational drivers. In these areas, the growing scarcity of the land resource and the mounting pressure generated by urban sprawl are currently escalating citizens' interest in the quality of their living environments and their awareness about the importance of saving/reintroducing green areas and farming in peri-urban spaces (Žlender and Ward Thompson, 2017). Such growing civic concerns about fertile land consumption and misuse are now timidly backed by some policy measures meant to support innovative land tenure initiatives. Moreover, this is paralleled by civil society organisations and local authorities that, in an extended governance frame, set the stage for healthy local foods and sustainable agricultural practices to nurture local communities and economies (Brunori et al., 2016).

To identify transition pathways to sustainable and equitable food and nutrition futures for Europe, in the context of the EU-funded Transmango project, a case study was carried out in Rome, Italy, to examine how the allocation of public land to young farmers may trigger quality food provision, employment opportunities, social and environmental benefits, reconfiguration of peri-urban areas and food systems. Rome in fact recently witnessed grassroots initiatives to grant youngsters access to land through the distribution of public land. A network set up by a group of young farmers and gathering various organizations and potential beneficiaries launched a mobilization that achieved, in 2014, the publication of two tenders overall assigning 10 farmland units.

Here we discuss how the question of democratic land control is entwined with the broader idea of an alternative food system (Franco et al., 2015) and how the land access struggle converges with the development of new organic farms, analysing the initiatives' transformational potential.

## **Methodology**

The work has been conducted using various methodological tools. The approach included desk analysis and interviews, aimed at a general description of the case study features, which were enriched by a scenario workshop articulated into two separate meetings. More in detail, the following main steps have shaped the process.

1. A desk-based analysis has been carried out to develop the explorative phase of the research. The study has scrutinized around a dozen policy documents and 50+ media articles and online news pertinent to land access and urban agriculture in Rome. This work led to assess the wider territorial and socio-cultural context in which the initiatives for land access developed, the main phases of the mobilizations carried out by land access activists and their achievements. Scrutinized literature was mainly referred to the metropolitan area of Rome, but also to higher geographical and institutional levels (Province, Region, State) when deemed pertinent. Scientific literature was also explored to locate the emerging reflections in the wider academic debate.

2. A two-day scenario workshop (16th February 2016 and 1st April 2016) has been organized with various actors, experts and stakeholders involved in recent years mobilizations. The participants represented farmers and would-be farmers, local administrators, environmentalists, civil society activists, technical advisors, organic associations managers and researchers. The scenario workshop (Vervoort et al. 2014) was meant to scope strategies on land access and use, in a perspective where land assignments would be further promoted and/or consolidated. The workshop was also designed to fulfil a dual goal: to offer participants room for visioning and to grant researchers insights from a heterogeneous collective. Moreover, the workshop played a central role in the case-study development as it provided the opportunity for stakeholders to dialogue on themes detached from the everyday issues and controversies, to focus on forthcoming opportunities and threats and to envisage future actions to be undertaken through cooperation among actors.

3. Additional interviews with key activists have been carried out to enrich the collected information and to harvest and discuss some final reflections. In particular, attention has been paid to good practices, critical and emerging issues around land access and use, ideological and pragmatic considerations, hampering and enabling factors, further opportunities and possible threats for the development of land access initiatives.

## **2.2. Research findings**

### *The renewed interest in access to agricultural land in Rome*

Innovative models of short chain delivery of food are emerging in Rome, where the traditional presence of family farming has developed into a landscape of grassroots initiatives around food and agriculture, increasingly animated in the last couple of decades (Fonte 2013, Grando et al. 2017). They are promoted by both producers and consumers, not rarely through joint efforts. These initiatives, which receive a growing interest for their multidimensional benefits (Zasada 2011, Mok et al. 2014), are occasionally supported by public bodies and are still growing at city and regional level. The rationale for the large majority of these initiatives is the direct relationship between organised consumers and individual or aggregated farmers producing in areas nearby the Capital city through organic farming methods or the like.

These experiences contribute to the revitalisation of the agricultural sector in the metropolitan area and, coupled with youth unemployment, trigger an increasing attention towards agriculture and alternative ways of farming, anecdotally evidenced by the success of training courses on organic agriculture. Similarly, it is also witnessed by aggregation processes of groups of young individuals mobilizing for access to land vis-à-vis the public administrations. The "Coordinamento Romano per l'accesso alla terra" (Roman coordination for access to land), a network set up by a group of young would-be farmers and gathering various organizations and potential beneficiaries, was particularly active on land access and use issues. They mobilized through various means, ranging from flash-mobs to symbolic occupations of

abandoned areas, meetings, training seminars and active participation to academic and institutional conferences and public debates. The reasons and aims of the mobilization were expressed in a document which became itself a catalyst and a token of the movement (CRAT, 2011). The document expressed the need for clear and transparent procedures for public land assignment to young farmers, in the aim to recover abandoned plots of land while establishing a new alliance between farmers and consumers towards a new rural-urban relation.

This mobilization succeeded in gaining institutional attention and farms suitable for farming held in public hands became the object of a negotiation with Municipal and Regional authorities to make them available for young farmers. Land availability and access in Rome are in fact hindered by various factors, such as sharp competition for the use of land by the building sector, high prices in the arable land market, rigidity in land tenure, difficult access to credit for young individuals with no assets to guarantee loans. Moreover, access to land held in public hands presented additional difficulties due to lack of or erratic political will, unclear property rights and scattered distribution of competences among different administrative levels. The negotiation between social actors and local institutions addressed these barriers and tried to identify suitable options for action.

#### *Land assignments and organic farming*

In 2014, at the peak of the mobilization, a tender was published by the Rome Municipal authority allocating for long-term rentals four lots accounting for overall 97 hectares: a small, but symbolically important number of farm units. The Rome Municipality tender, paralleled by one issued by the Regional Administration, was grounded on two basic axes: i) applicants had to be either professional farmers or young individuals below 40 years old – or cooperatives thereof; ii) applicants had to present a technical proposal (business and development plan). Both these requirements were consistent with the political platform developed by the activists engaged in the mobilization who stressed the importance that the assignments also fulfilled social and environmental goals. Several criteria had to be met by the contenders and their bids were evaluated against seven parameters ranging from the applicant's agricultural competence, to the robustness of his/her proposal, to the foreseen use of renewable energy. The seven conditions also included the adoption of organic farming methods and this parameter was one of the best rated, scoring 15/100 points. The selected proposals were finally chosen out of a group of 104, of which 80% submitted by young farmers and 34% by women: all assignees had presented business plans grounded on organic farming.

Both the process and the results were to some extent welcomed by the access to land movement, who nevertheless underlined that it only represented a step in a longer path. Eventually, activists partially diverged on tactical aspects, but kept the strategic orientation of having access to land as a crucial pillar in the achievement of food sovereignty. Moreover, organic or agroecological farming as a key method of cultivation was intended as both a lever of political coherence and a legitimization tool vis-à-vis the citizenship. Similarly, interaction with the local authorities was largely recognised as a functional approach, either based on a collaborative relationship or grounded on political negotiation.

#### **Discussion**

Mobilizations on land access in Europe epitomise innovative reconfigurations of modern stakes in western societies, such as the search for a job based on an ethical entrepreneurship; a socially fair utilisation of public land to develop multifunctional farming (Di Iacovo 2011, Zasada 2011); the delivery of fresh and seasonal local food at reasonable prices; the promotion of a more advanced food and nutrition awareness. In this rearticulated context, the Rome experience shows that organic farming combined with short chains and proximity markets present both alternative business opportunities and provide a base for a social pact with consumers, with whom assignees aim to create networks of ecologically and socially committed actors.

Despite their limited scale, these experiences seem to respond to societal concerns, as shown by the more or less tacit acceptance shown by the dwellers living close to the assigned plots: given the social and ecological commitment of the incoming farmers, the newly established farms are seen like environmental sustainability presidia for the surrounding territory (whose ecological conditions are also

crucial for the individual farm development). In this respect, the convergence of interests of different nature enabled coalition building with non-farming constituencies (neighboring dwellers, pupils' families, local administrators), going beyond theoretic and ideological visions. Re-establishing the social function of land, addressing those citizens who have pragmatic approaches to their daily matters, might in fact even reduce the potential for conflicts, as stated by activists during the case study interviews. Indirectly, thus, alternative food systems embedded in these assignments have a strong potential in bridging interests and constituencies and may represent an opportunity for a reconsidered role of farming land, too, particularly in peri-urban areas.

Such convergence was one of the points of depart and strength of the land access mobilization, which represents an interesting example of social engagement and civic participation that proved to be to a certain extent successful in Rome and potentially replicable in other contexts. A transformational potential is in fact clearly visible if we consider the two parallel processes of scaling-out (replication of the initiatives, both in the Roman context and elsewhere) and scaling-deep (influence of these initiatives on attitudes and behaviours of the political and business spheres: a sort of "contamination of the mainstream") (Moore et al. 2015). Differently, as clearly stated by the access to land campaigners, scaling-up, alias the dimensional growth of newly established farms, is not considered an option by the activists who aim at a future with a greater number of small farms instead of fewer larger ones.

Access to land, short value chains and agroecology, a trinity for environmental and food justice movements advocating for food sovereignty, would then result in a rural-urban blend and a producer-consumer mend of relationships. A soft physical transition between built spaces and farming areas may in fact go in parallel with the food system temporal transition towards an ecologically literate re-localisation of agri-food practices.

These experiences can be seen as niche initiatives, developed within nested markets to a certain extent detached from the agro-industrial food price competition (Ploeg et al., 2012). However, these niches can also be regarded as outposts of a new way to approaching food production and consumption that may develop in the future towards a more diversified and resilient urban food system, or even towards a more radical social change in the relation between communities, territory and food.

Assessing the transformational potential of a group of initiatives also entails understanding for how long, and overcoming which challenges, these enterprises can last and possibly develop. In this regard, during the scenario workshops carried out for the case study, these initiatives were debated in terms of bunkers/outposts, with function of environmental presidia and social laboratory. These outposts can have both a defensive role (niches where novelties can develop partially protected from powerful mainstream forces) and a pro-active transformative role, when they establish a sort of neuronal network, connecting each other and with other similar initiatives.

Organic and agroecological farming play a central role in this paradigm change: they are placed at the core of the technical motivations would-be farmers envision for their farm management and are seen by both activists and administrations as a way to gain citizens' and market's legitimacy. Moreover, they are considered as an essential tool to deliver ecological services in areas exposed to various types of environmental aggressions.

**Acknowledgements:** the paper has been elaborated in the framework of the TRANSMANGO project (EU 7° FP) Assessment of the impact of drivers of change on Europe's food and nutrition security (Grant agreement no: 613532)

## References

- Borras, S.M. jr., Seufert, P., Backes, S., Fyfe, D., Herre, R., Michele, L., & Mills, E. (2016). Land Grabbing and Human Rights: the Involvement of European Corporate and Financial Entities in Land Grabbing outside the European Union. European Union, Policy Department, Directorate-General for External Policies. doi:10.2861/26
- Brunori G., Galli F., Barjolle D., van Broekhuizen R., Colombo L., Giampietro M., Kirwan J., Lang T., Maye D., de Roest K., Rougoor C., Schwarz J., Mathijs E., Schmitt E., Smith J., Stojanovic Z., Tisenkopfs T. and Touzard J.M. (2016) Are Local Food Chains More Sustainable than Global Food Chains? Considerations for Assessment, Sustainability 2016, 8, 449; doi:10.3390/su8050449
- CRAT (2011). Vertenza per la salvaguardia dell'Agro Romano - Terre pubbliche ai giovani agricoltori. <http://www.aiab.it/images/stories/UfficioStampa/vertenzagroromano.pdf>
- Di Iacovo F. (2011). Le opportunità dell'agricoltura multifunzionale e sociale per l'agro-romano. Proceedings of the Workshop "L'Agro Romano tra tutela e sviluppo", Rome 15 June 2011
- Fairhead J., Leach, M., Scoones, I. (2012) Green grabbing: a new appropriation of nature? *Journal of Peasant Studies*, 32(9), 237-261.
- Fonte M. (2013). Food consumption as social practice: Solidarity Purchasing Groups in Rome, Italy. *Journal of Rural Studies* 32: 230-239
- Franco, J., Monsalve, S. and Borras, S. (2015) Democratic land control and human rights, *Current Opinion in Environmental Sustainability* 15, pp. 66-71.
- Grando, S., J. Carey, E. Hegger, I. Jahri, and L. Ortolani. 2017. Who takes the lead? Evidence from three cities across Europe. *Urban Agric. Reg. Food Syst.* 2. doi:10.2134/urbanag2016.05.0002
- Kay, S., Peuch, J., Franco, J. (2015) Extent of farmland grabbing in the EU. Study for the European Parliament's Committee on Agriculture and Rural Development.
- Mok H-F., Williamson V.G., Grove J.R., Burry K., Barker S.F., Hamilton A.J. (2014): Strawberry fields forever? Urban agriculture in developed countries: a review. *Agronomy for Sustainable Development* 34(1): 21-43.
- Moore M-L., Riddell D., Vocisano D. (2015). Scaling Out, Scaling Up, Scaling Deep. Strategies of Non-profits in Advancing Systemic Social Innovation. *The Journal of Corporate Citizenship* Issue 58: 67-84.
- Ploeg, J.D. van der, Jingzhong Y., Schneider S. (2012): Rural development through the construction of new, nested, markets: comparative perspectives from China, Brazil and the European Union, *Journal of Peasant Studies*, 39 (1): 133-173.
- Ploeg, J.D. van der, Franco J., Borras, S.M. (2015) Land concentration and land grabbing in Europe: a preliminary analysis. *Canadian Journal of Development Studies* 36(2), 147-162.
- Uttaro A.M. (2012). Dove si coltiva la città. Community gardening e riattivazione di spazi urbani, *Sociologia Urbana e Rurale* n. 98: 12- 27.
- Vervoort, J.M. et al. (2014). Challenges to scenario-guided adaptive action on food security under climate change, *Global Environmental Change* Vol. 28: 383–394.
- Zasada I. (2011). Multifunctional peri-urban agriculture—A review of societal demands and the provision of goods and services by farming, *Land Use Policy* 28: 639–648
- Žlender V. and Ward Thompson C. (2017): Accessibility and use of peri-urban green space for inner-city dwellers: A comparative study *Landscape and Urban Planning* 165: 193-205.

# **The potential impact of urban agriculture on food production, water management and energy consumption: the case of Padua**

**Michele Dalla Fontana<sup>1</sup>, Denis Maragno<sup>1</sup>, Giulia Lucertini<sup>1</sup>, Sarah Stempfle<sup>1</sup>, Matelda Reho<sup>1</sup>, Francesco Musco<sup>1</sup>**

<sup>1</sup>Department of Design and Planning in Complex Environments, IUAV University of Venice, Venice, Italy

---

**Keywords:** rooftop gardens, urban agriculture, energy, water, food

---

## **1. Introduction**

Food demand is expected to substantially increase in the next decades due to population growth (United Nations, 2014) and increase of middle-class, which, particularly in developing countries, entails a change in lifestyles and consumption patterns. Although forecasts show a less intense increase in UE countries compared to other areas in the world, the current consumption patterns are still alarming. Attention to food security issues has been increasing in the last years also considering events such as 2007-2008 world food price crisis (Allouche et al., 2014; Wichelns, 2017) caused by a set of interconnected reasons (drought, increasing price of fossil fuels, etc.) that have heightened concerns also in developed countries. A further critical element is the difficulty to have access to high-nutrient food by part of the population. “Food deserts”, in fact, have been rapidly increasing in the last years and the phenomenon is particularly evident in metropolitan areas in which inhabitants do not have physical access to grocery stores where to buy “healthy food” and this results in serious consequences for public health (Walker, Keane, & Burke, 2010). Besides this, food issues are inherently connected to a wider range of social, economic and environmental issues. The energy question related to the food sector, although often neglected, is of primary importance. Energy consumption in the food sector, which include all its sub-sectors, counts for the 26% of the final energy consumption in the UE and it is responsible for about a fifth of GHG emissions (Monforti-Ferrario & Pascua, 2015). Energy consumption is differently distributed along the entire value chain and it varies according to products and geographical areas. Therefore, the relationship between food and energy is a crucial node in decision-making processes and in policies implementation for the food sector transformation. Food has then the potential to become an important catalyst for urban policies that have to respond to different challenges of the “modern city”. Despite in the last years examples of urban food policies have considerably increased, energy issues, although often mentioned among the motivations for implementing urban food policy, are eventually neglected. Differently from developing countries, European cities have less room for maneuver for their transformation since they must take action in existing and well established urbanized areas. Food in this sense can have an important role for the city transformation also in terms of reducing energy consumption. In this paper, we propose a methodology (still under development) to assess the production potential of urban areas through the implementation of urban agriculture activities.

## **2. Urban agriculture: transforming the city through a more sustainable and healthy food system**

The redefinition of food as an “urban issue” and its introduction into the urban policy agendas led to increased attention to urban agriculture. The latter is well recognized for its contribution to improve local food quality, security and accessibility, but it is now becoming important for the regeneration and transformation of sustainable cities. Urban agriculture includes a series of practices and projects (beyond community gardens and urban farming), that contribute to the larger transformation of the food geography (Sonnino, 2014) and the development of sustainable food systems that are «inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimize waste and conserve biodiversity while adapting to and mitigating impacts of climate change» (Milan Urban Food Policy Pact, 2015).

The development of coexisting living spaces and green horticultural spaces have increased the possibilities of agricultural production in cities, encouraging the development of realities such as agro-housing, vertical farming and green roofs. In this paper, we particularly focus on the latter and urban agriculture “on ground” not only for their varied applications and adaptability, but also for their

interconnections with the energy and water sectors. Recent studies show how the agricultural production on green roofs can meet over the three-quarters of a city demand for horticultural products (Orsini et al., 2014). About energy issues, green roofs are well known for mitigating the urban heat island effect and reducing buildings energy consumption. Thanks to their capacity to provide ecosystem services, urban agricultural areas can be structured as green infrastructures in urban contexts, by designing green networks and ecological corridors, increasing biodiversity, absorbing CO<sub>2</sub> emissions, improving air quality, facilitating urban water drainage, recycling organic waste at the local level and more generally reducing city ecological footprint.

Therefore, urban agriculture can be a lot more of an individual practice and single intervention, but it can also have a central role into the transition towards more sustainable, resilient and equitable development models. Nevertheless, urban agriculture must be considered within a systemic approach in order to maximizing its benefits in the three dimensions of sustainability: environmental, social and economic. Therefore, it is not only important to increase the number of areas devoted to urban agriculture initiatives, but it is also important to develop a set of place-based principles and methods that must be integrated into designing and planning processes of cities. We here propose a possible methodology that aims to assess the production potential for the city of Padua.

### **3. Methodology**

The methodology applied is developed in 5 steps:

A first phase in which, in a pilot area of the city of Padua (Italy), areas suitable for urban agriculture activities are selected. Two typologies of urban agriculture activities are here considered: urban agriculture “on ground” and “on roof”. Areas for “on ground” urban agriculture are identified on the basis of only one criterion: permeability. Permeable “on ground” areas have been considered as suitable. In the next developments of the methodology other criteria such as ownership of the land (public or private) and land use will be considered. On the other hand, the selection of the roofs considered surfaces with a slope less than 10°, which are considered suitable for the implementation of intensive green roofs, which technical characteristic can be similar to urban agriculture initiatives. In the next developments of the methodology other characteristics of the buildings (load capacity, height), typology of use (residential, commercial, industrial), square footage of the surfaces will be considered.

In the second phase, crop species suitable for urban agriculture in Padua are identified. Crop species are selected from a list of typical local products and they are then classified depending on if they are more suitable for “on ground” or “on roof” interventions.

In the third phase, the production potential of three different scenarios is assessed. In the three scenarios, different crop species, chosen at the preceding stage, are implemented in the areas, which were identified in the first phase.

In the fourth phase, some considerations on the potential to satisfy the local demand of fruit and vegetables products in each of the three scenarios are made.

In the last phase, observations on criteria to consider for the reduction of energy consumption are made.

## **4 Analysis**

### **4.1 First phase: areas selection**

The identification of a first pilot area to test the methodology has been carried out by photo-interpretation of satellite images (Figure 1). The chosen area is in the eastern part of the city of Padua, in a transect where residential area and commercial-industrial area meet. The area of about 165 ha is characterized by different functions, with a residential area clearly separated from the commercial area by an important road axis. This pilot area is useful to assess the different potentials of urban agriculture in very different contexts. The objective of this phase is to identify and quantify the areas that, because their characteristics, are more suitable for urban agriculture. The calculation of the areas is based on the ISTAT census areas so that it is possible to cross-reference with population statistics at a later stage. Results show a great difference of available surfaces between residential and commercial areas. The majority of “on ground” areas are concentrated in residential areas due to the presence of parks, non-



cultivated green areas, private green areas (Figure 2). In the commercial areas, with few permeable areas, there is a high concentration of rooftops suitable for intensive green roofs (Figure 3). Available areas are around 65 ha on the ground and 14,5 ha on rooftops.

Results are approximate and the next developments of the methodology will consider more criteria such as roof weight capacity, buildings height, ownership (public or private), square footage, proximity to source of pollution (roads, industries, etc.). It is very likely that with the application of this additional criteria in the identification process the amount of suitable areas will significantly reduce.

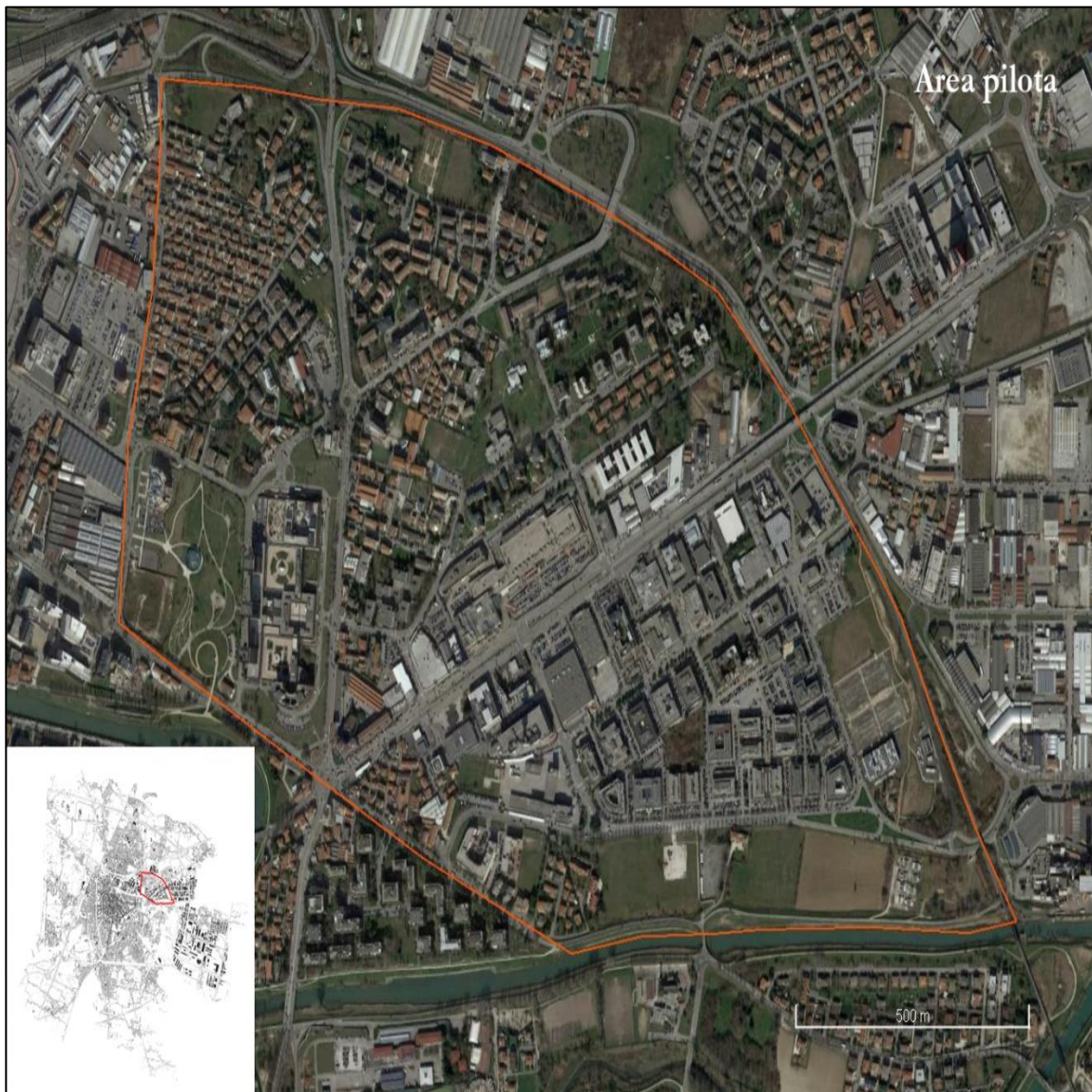


Figure 1| Based on Google Earth image

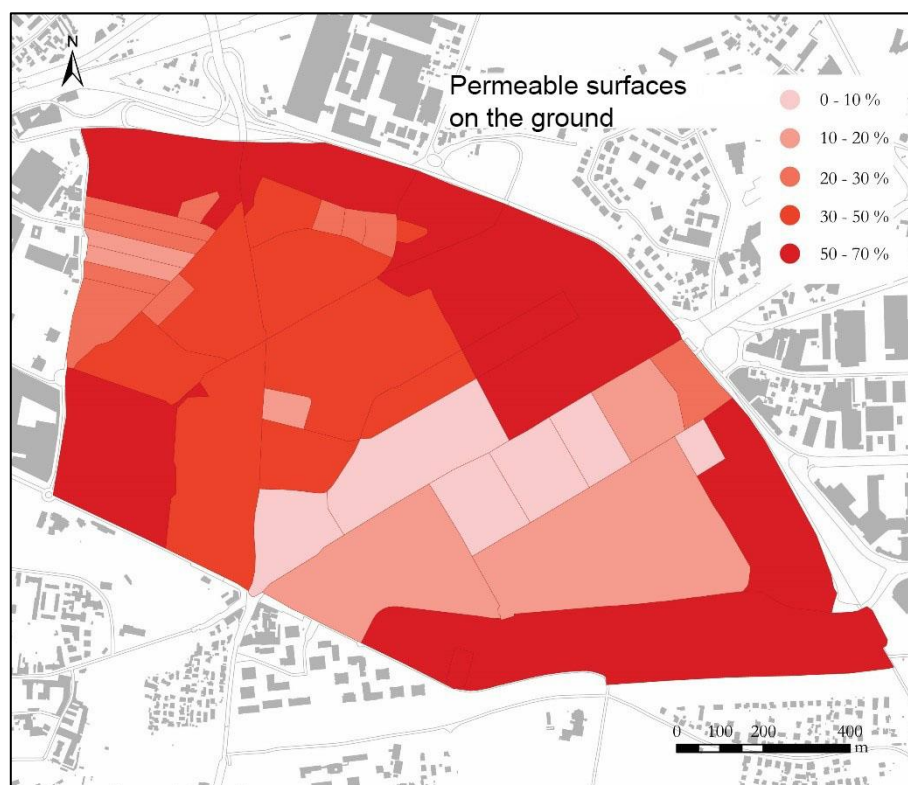


Figure 2 | Permeable surfaces on the ground. Elaboration: Maragno & Dalla Fontana

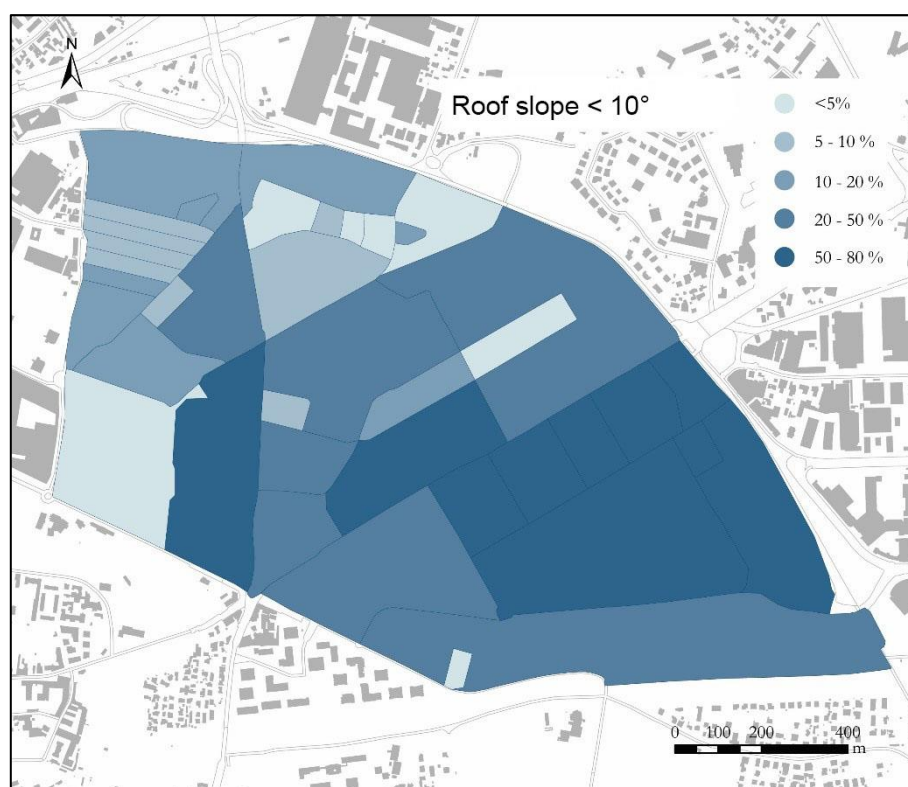


Figure 3 | Roof slope < 10°. Elaboration: Maragno & Dalla Fontana

#### 4.2 Second phase: criteria for the selection of the crop species

Crop species suitable for the areas identified in phase one are selected from a list of typical local products (Veneto Agricoltura, 2016) in order to promote local products that usually suffer from the pressure of monocultures such as corn and wheat and agro-industrial crops such as soy and chard that are predominant in Padua peri-urban areas. To facilitate the analysis stage, four representative crop

species (both vegetable and fruit) are selected to be used in “on ground” and “on roof” urban agriculture. Crop species selected are: apple tree, carrot, radicchio and lettuce. For each crop, the productive potential (t/ha) has been identified (Table 1) based on Veneto Agricoltura data. In this paper, urban agriculture productive potential is assumed to be equal to traditional agriculture.

Table 1 | T/ha of selected crop species. Based on Veneto Agricoltura data.

Crop species	t/ha
Apple tree	54,5
Carrot	52,7
Radicchio	15,7
Lettuce	34,3

#### 4.3 Third phase: productive potential assessment

In this phase, the productive potential of the pilot area is calculated based on the available areas identified in phase 1 and crop species selected in phase 2. For the “on ground” initiatives, it is assumed that equal areas are assigned for the different crop species. On the other hand, for “on roof” initiatives, only vegetable species are considered.

Table 2 | Estimate of productive potential

Type of area	“On ground”		“On roof”	
	Area (ha)	Productive potential (t)	Area (ha)	Productive potential (t)
Apple tree	16,25 ha	885,625	/	/
Carrot	16,25 ha	856,375	4,8	252,96
Radicchio	16,25 ha	255,125	4,8	75,36
Lettuce	16,25 ha	557,375	4,8	164,64
Total area	65 ha	2553,4	14,5	492,96

Results (Table 2) show that in the pilot area there is a productive potential of about 3.045 t of fruit and vegetables, which might vary depending on crop species. Most of the production would take place “on ground” with about 2.550 t due to the larger availability of land and the possibility to use fruit plants. Considering only horticultural crops “on roofs”, a productive potential of 490 t can be estimated anyway.

#### 4.4 Fourth phase: comparison with local demand

To understand the potential to meet the local demand of fruit and vegetable through urban agriculture initiatives it is necessary to make a comparison with the average population food consumption. To this end, we refer to Italian food consumption data from the EFSA (European Food Safety Authority) (2011). The database provides statistics on food consumption (grams/day) of the Italian population, and for the purposes of this paper only the categories “vegetables” and “fruits” are considered. According to the statistics, the average per capita consumption is about 100 kg/year of vegetables and 70 kg/year of fruits. Assuming both “on ground” and “on roof” production, the pilot area would be sufficient to meet the fruit and vegetables demand of around 17.900 inhabitants (almost 4 times the population living in the pilot area). In a second scenario, with the production concentrated only on rooftops, the demand of 2.900 inhabitants would be met. In a third scenario, in which only “on ground” initiatives are considered, the pilot area would meet the demand of around 15.000 inhabitants.

#### **4.5 Fifth phase: Criteria to reduce energy consumption**

Urban agriculture can contribute to the reduction of energy consumption mainly in two ways: reducing the distance between producers and consumers and related energy consumption and GHG emissions due to transport; and if it is considered as green infrastructure, it can mitigate urban heat island effect, therefore reducing energy consumption due to cooling systems and increasing building energy efficiency. Increasing local food production is inherently important, but not sufficient to reduce the energy consumption in the food sector. The dissemination of production areas across the urban fabric and the “last mile” logistic are also fundamental in order to reduce the transport of products. Therefore, this kind of assessment can be done only after all the potential areas for urban agriculture have been identified for the entire city of Padua. A quantitative assessment of building energy efficiency through urban agriculture practices on rooftops is beyond the objective of this paper. Nevertheless, some considerations are necessary. In the case of Padua, for example, considering only “on roof” intervention, energy benefits would come mainly from the reduction of energy consumption of buildings. On the other hand, if also “on ground” interventions would be considered, the largest dissemination of green areas might contribute to the reduction of the urban heat island effect (Wong et al., 2003; NYSERDA, 2013). Especially as regards rooftops, elements such as the techniques used, irrigation systems, soil layer are crucial in determining urban agriculture effectiveness in reducing energy consumption. Crop species, which can have different Leaf Area Index (total one-sided area of leaf tissue per unit ground surface area) and that can differently affect the building protection from solar radiation. Further research is needed to understand which crop species are more suitable to these purposes.

#### **5. Discussions and next steps**

Although the first results of the production potential of the pilot area are interesting, they remain overestimated. Next steps for this research aim to introduce further criteria for the selection of the areas, both considering physical characteristics and socio-economic aspects that have been neglected in this paper. With a more sophisticated methodology, it is likely that the areas suitable for urban agriculture will reduce drastically, with a reduction of the production potential as well. The methodology, once perfected, will be used for a larger analysis with the objective of assessing the productive potential of the entire urban area of Padua. It is expected that the analysis on the entire city will highlight great differences in the distribution of available areas suitable for urban agriculture across the urban fabric. The ultimate objective, however, is to identify a network of potential productive areas connected with the existing green areas in the city, so that it can develop a substantial transformation of the urban landscape and the reduction of energy consumption. Further research will include other criteria to understand the urban agriculture’s contribution to the management of urban storm water in the city of Padua.

## References

- Allouche, J., Middleton, C., Gyawali, D., (2014). "Nexus Nirvana or Nexus Nullity? A Dynamic Approach to Security and Sustainability in the Water-Energy-Food Nexus". STEPS Working Paper 63. STEPS Centre, Brighton (23 pp.).
- EFSA (2011). La banca dati particolareggiata dell'EFSA sui consumi alimentari in Europa. Accessibile a: <http://www.efsa.europa.eu/it/food-consumption/comprehensive-database>
- Monforti-Ferrario, F., & Pascua, I. P. (Eds.). (2015). Energy use in the EU food sector: State of play and opportunities for improvement. Publications Office.
- NYSERDA (2013). Sustainable Urban Agriculture: Confirming Viable Scenarios for Production. Final Report.
- Orsini, F., Gasperi, D., Marchetti, L., et al. (2014), "Exploring the production capacity of rooftop gardens (RTGs) in urban agriculture: the potential impact on food and nutrition security, biodiversity and other ecosystem services in the city of Bologna", *Food Security* 6(6): 781-792.
- Sonnino, R. (2014), "The new geography of food security: Exploring the potential of urban food strategies", *Geographical Journal* 182(2): 190-200.
- United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision.
- Veneto Agricoltura. (2016). Dagli orti del Veneto: appunti per una carta d'identità delle produzioni orticole venete. Azienda Regionale per i Settori Agricolo, Forestale ed Agroalimentare, Legnaro.
- Veneto Agricoltura. (2017). Prime valutazioni sull'andamento del settore agroalimentare Veneto nel 2016. Azienda Regionale per i Settori Agricolo, Forestale ed Agroalimentare, Legnaro.
- Walker, R. E., Keane, C. R., & Burke, J. G. (2010). "Disparities and access to healthy food in the United States: A review of food deserts literature". *Health and Place*, 16(5), 876–884.
- Wichelns, D. (2017). "The water-energy-food nexus: Is the increasing attention warranted, from either a research or policy perspective?" *Environmental Science and Policy*, 69, 113–123.
- Wong, N. H., Tay, S. F., Wong, R., Ong, C. L., & Sia, A. (2003). "Life cycle cost analysis of rooftop gardens in Singapore". *Building and Environment*, 38(3), 499–509.
-



## Development of an urban agriculture project: "projection" and "revelation"

Anne-Cécile Daniel<sup>1</sup>, Mélanie Colle<sup>2</sup>, Christine Aubry<sup>3</sup>

<sup>1</sup>AgroParisTech/EXP'AU anne-cecile.daniel@agroparistech.fr

<sup>2</sup>AgroParisTech/EXP'AU melanie.colle@agroparistech.fr

<sup>3</sup>INRA, christine.aubry@agroparistech.fr

More than a passing trend, urban agriculture has become a necessary tool for creating more liveable and sustainable cities. It responds to many issues of the 21st century and its dynamism increasingly seduces councillors and urban developers. Yet the local authorities and developers are often helpless when faced with the development of an urban agriculture project. It is rare for municipal employees to possess agricultural skills and municipal architects still have little experience in the domain. For the past two years, our research team in agronomy has been interested in following different project-planning trajectories in professional urban farming projects. The data comes from the support and monitoring of eighteen projects that we have carried out with private and public partners. Depending on who is carrying out the project, we have identified 3 main types of project-development that we've called: projection, revelation, or a hybridation of the two. 'Projection' is when councillors & promoters have a strong ambition or a specific objective (a specific form of urban farm or set of quantitative results). The project developers put out calls for projects or restricted calls for proposals in order to speed up the process and find a project leader. The example of the vertical farm at Romainville is testament to this. 'Revelation' is when the project comes from an overall assessment or at people's initiative. This method requires mediation or even consultation that encourages direct contact between the town's inhabitants and project leaders. These examples today call into question classic agricultural installation and the temporality imposed by urban projects. The challenge is to implement a suitable project, which can be easily reproduced, which raises doubts about the feasibility of certain projects due to their high costs.

### Introduction

Far from being a passing trend, urban agriculture (UA) has become a necessary tool for creating more liveable and sustainable cities (Ackerman, 2014 ; Aubry et al., 2015). It responds to many issues of the 21st century and its dynamism increasingly seduces councillors and urban developers.

In France, two major findings can explain the development of UA in recent years. First of all, it results from the growing awareness of the population about food issues (products quality and origin). Urban food is becoming a major topic in the cities of tomorrow due to global warming, energy transition, green energy, positive health, urban metabolism and so on. A reflection on food system relocation is underway (e.g. local food system or territorial food system). It is being carried out by public authorities at different levels (General States of Food, Territorial Food Project), by office expertise or research institutions (e.g. studies on food self-sufficiency of cities) but also by civil society.

The second major reason comes from the demand of green spaces and recreational areas in cities (UNEP, 2016, Aggeri, 2010). The report of the Real Estate and Social Development Chair (ESSEC, 2015) clearly shows the influence of green spaces on the quality of life of a neighbourhoods. However, including these spaces implies a compromise with constructible land: green spaces are a limited importance compared to urbanized areas. Cities are therefore looking for new ways of greening that can provide different services. Furthermore they enhance projects that guarantee a self-management of the areas according to the decreases of public financial resources in recent years. UA seems to respond to these issues.

The programming of these forms of dynamic agricultural green spaces in the city is not yet really managed by specific rules (Aubry et al., 2015, 2017). The field of possibilities is still very wide and planners, urban planners, landscape architects, architects and design offices are beginning to take up the theme. Agricultural activity has become a planning element (Roggema 2017, Viljoen 2015) that concern SAFER (land development and rural settlement companies) and the chambers of agriculture until now. Other "urban" actors gradually invest in the development and management of agricultural land. However, agriculture is not a field well known by urban actors, it is rare for municipal employees to possess agricultural skills and the municipal architects still have little experience in the field.

If UA seems to be considered today as an interesting planning tool for living better in the city, How do UA projects set up? Who are the actors mainly involved? How are the selected procedures of UA projects operated?

This article is a first outcome of a research still in progress and it is based on the results of an empirical investigation.

This paper aims to better understand how the UA projects set up based on the "degree of definition" of the project and the "selection procedure" of the candidate(s).

We have indeed found that the categories mobilized to define the installation process of young farmers such as, the progressive installation (Le Blanc, 2011) or the succession and recovery strategies identified by Parquet and Le Coq (2017) do not reveal trajectories of proponents of UA project influenced by the urban territorial context and the processes of their selection.

## 1. Materials and Method

### 1.1. Sample

Our sample consists of 18 intra-urban farm projects localized in France that has been studied in the framework of different contexts and projects set up between 2014 and 2017.

*Tab.1. Main characteristics of ongoing or implemented UAP*

Source	Project title	Year	Land owner	Project typologies*
Interview	Plaine de Montévrain	2017	Public	Productive urban farm
Interview	Ferme de Bougival	2017	Public	Urban micro-farm
Interview	Jardins Perchés	2016	Private	Urban micro-farm
Interview	Ferme de Romainville	2016	Public	Productive urban farm (vertical greenhouse)
Interview	Pot'iront	2010	Public	Urban micro-farm
Interview	Toit tout vert	2013	Private	Productive urban farm (greenhouse)
Interview	Doulon Gouhard	2017	Private	Productive urban farm
EXPAU	Cité des Indes	2017	Private	Productive urban farm (greenhouse)
EXPAU	Concorde	2016	Public	Productive urban farm (greenhouse)
EXPAU	La Caverne	2016	Private	Productive urban farm
EXPAU	RATP	2016	Private	Productive urban farm
EXPAU	Fosse Sablonnière	2017	Public	Urban micro-farm
EXPAU	Carrefour	2017	Private	Urban micro-farm
Research	Paysan urbain	2014	Private	Urban micro-farm
Research	Hôtel Pullman	2013	Private	Edible landscape
Research	Moultoux	2008	Public	Urban micro-farm
Research	Mendes France	2014	Public	Urban micro-farm
Research	V'ile fertile	2014	Public	Urban micro-farm

\* These typologies have been defined in the book "Agriculteurs urbains", editions France Agricole, Guillaume MOREL-CHEVILLET, 2017, 280p

7 projects were identified by a working group on UA and Eco-district led by the Ministry of Ecology and Territorial Coherence. These projects are referenced under "interview" in Table 1.

The analysis of these projects is based on: the contents analysis of calls for projects (3), the notes taken during the participating observation moments (e.g. working meetings) (2) and semi-directive interviews (2).

6 projects have been monitored and accompanied by an engineering office in UA (EXP'AU)<sup>1</sup> located in Paris. These projects are registered under "EXPAU" in Table 1. The data concerning the project and the selection processes were collected during the missions of Exp'AU.

5 are urban micro-farm projects<sup>2</sup> that have been analyzed as part of a study on the functioning and sustainability of urban micro-farms (Daniel, 2017). These projects are referenced under "research" in table 1. The data were collected by observation and semi-directive interviews.

The panel of analysed projects is diverse in terms of the location, type of ownership and form of AU project. 6 out of 18 are in Paris Intramuros, 8 are in surroundings of Paris, and 4 are located outside Ile de France Region. In 9 cases, the projects are located on private area (private companies and promoters in charge of a development operation) and the 9 others on public sites belonging to a community or to a Public Establishment (municipality).

In terms of urban farm forms, we distinguish urban micro-farm from productive urban farms. Urban micro-farms (9) are characterized as multifunctional farms, requiring the involvement of volunteers in its operation and the placing on the market of products (Daniel, 2017). Production is variable according to the project objective, in contrast to productive urban farms (8) for which this production objective is primary. They can be classified into different types, for example, a vertical greenhouse, greenhouse installations and open field vegetable farms. We also observed an edible landscape project created by a luxury restaurant.

## ***1.2. Analysis of the trajectories of an UA project according to the "Initial definition of the project" and the "selection procedure"***

In order to identify the different trajectories of UA projects installation, we decided to analyse both criteria corresponding to two key stages of project construction: (1) initial definition of the project; and (2) the selection process adopted to select the project leader (PL).

(1) The "initial definition of the project" results from 3 elements: (i) the stakeholder(s) (owner / manager or project leader) that promote the idea of UA project, (ii) the precision of the project idea and (iii) the financing or not of a feasibility or engineering study to carry out the UA project. The purpose of the project is not always defined when the project is launched.

(2) For the project leader (PL) selection process, 4 are the main procedures analysed: the Call for Projects (CP), the Call for Expressions of Interest (CEI), the Call for Application (CA) and the grè à grè (GG). The last one is selected when no call is launched. We will see in which situations these tools are mobilized in particular in regard of the degree of initial definition of the project and the issues related to the initial definition.

---

<sup>1</sup> Spin off created in 2013 and belong to AgroParistech, it supports private operators and public authorities in the development of urban agriculture. The feedbacks of field research are used to formulate research questions for researchers from the Urban Agriculture team (AgroParisTech / INRA). The authors of this article work in this structure

<sup>2</sup> Study funded by the Ecodesign Chair from 2015 to 2017



## 2. Results and interpretations

### 2.1 3 strategies to set up an Urban Agriculture Project (UAP)

As indicated in the previous paragraph we defined the "initial definition of the project" based on the analysis of 3 criteria considered as main as presented in Table 2.

Table 2. The degree of initial definition of UA projects

Projects	Initial definition of the project			
	(i) Actor at the initiative of the project	(ii) Degree of precision of the definition at the beginning of the project by the owner / manager	(iii) Funding a preliminary or feasibility study	
Projet Paysan urbain	PL	No initial idea	+	no
Mouloux	PL	Social project	+	No
Mendes France	PL	No initial idea	+	No
Pot'iront	PL	No initial idea	+	No
Toit tout vert	PL	No initial idea	+	No
Cité des Indes	Developer	Greenhouse model on a roof	+++	Yes
Montévrain	OW	Market gardening in an Eco-district	+++	Yes
Concorde	OW	Greenhouse built into a noise barrier	+++	Yes
Jardins Perchés	OW	Greenhouse on a roof	+++	Yes
Bougival	OW	Permaculture farm on 10000m <sup>2</sup>	+++	Yes
Ferme de Romainville	OW	Vertical farm with culture in a substrate	+++	Yes
La Caverne	PL and OW	UA project in a car park	++	Yes
RATP	PL and OW	UA project	++	Yes
V'ile fertile	PL and OW	UA project	++	No
Doulon Gouhard	PL and OW	Re-installation of an agricultural project	++	Yes
Fosse Sablonière	PL and OW	Re-installation of an agricultural project	++	No
Carrefour (HLR)	PL and OW	UA project	++	Yes
Hôtel Pullman	PL and OW	Edible vegetable garden for restaurant	++	No

Legend: PL: project leader; OW: owner; +: no idea; ++: general idea about urban agriculture; +++: precise idea

Through classifying the projects according to (i), (ii) and (iii), 3 categories, called "strategies", can be differentiated. The first one, called "**revelation**", corresponds to the projects initiated by an UAPL themselves and where the land owner did not think of the project before, and so did not carry any preliminary or feasibility studies to implement a project. The second one, called "**projection**", corresponds to the projects initiated by a land owner or an urban developer: they have a clear idea of the UA project they want to implement and commissioned one or several studies. The last one is more

hybrid : both PL and OW contributed to imagine a project : the OW (or urban developer) has an idea, which is precised by an UAPL. In this case, preliminary or feasibility studies are not always necessary. We call this last case "hybridization".

#### *2.1.1 Projects revealed by the urban agriculture project leader (UAPL)*

Among the results, 5 projects were "revealed" by the UAPL at its own initiative. The owners or site managers did not have the objective of initiating an UA project and therefore no feasibility studies were carried out by the owner or site manager beforehand.

In these cases, the UAPL approaches itself the owner or site manager in order to operate one of their available site.

The UAPL often choose a site according to its location (close to its habitat or a public transport network). The owner or site manager does not participate in the definition of the urban agriculture project (UAP), but can impose constraints related to the UAP installation or the operation of the site. It may also choose to offer financial assistance to the UAPL to facilitate the installation and the operation of the project.

#### *2.1.2 Projects that project themselves according to an idea of the project management (request made by an owner or by PL)*

6 projects were planned according to an intention that was «projected » by the owner or site manager. These intentions may be of different kinds, such as "transforming a football field into a permaculture farm" (Bougival), "integrating a productive agricultural greenhouse into a noise barrier in the context of the urban renewal of a neighbourhood" (Concorde) or "building a vertical agricultural greenhouse" (Romainville). All these projects require project management assistance and feasibility studies.

These projected intentions were initially pre-defined to some degree by the project manager (or even by a private planner when he is the project manager, as for the project of the Cité des Indes). The owner/site manager/public or private planner reserves part of its land and undertakes studies to deepen the project.

Candidate search is organized in a second phase. The candidate often does not have lot of option configuring the site, infrastructures, choosing cultivation techniques and even defining the economic aspect of the project due to the constraints imposed by the owner/site manager/public or private planner. As the projects are often innovative and ambitious, a co-construction phase between the owner/site manager/public or private planner and the selected candidate is essential to find appropriate solutions.

#### *2.1.3 Les projets qui naissent d'une hybridation d'idées*

A hybrid category has been observed among projects: both UAPL and owner/site manager/public or private planner contribute to the definition of the project (7 out of 18 projects). This strategy associates the needs of different stakeholders. In this case, the owner/site manager/public or private planner generally wants to develop an UAP, but does not have a clear idea of the project. It sets up a series of measures to make itself known and searches a UAPL to build its project with. It can thus solicit the municipality, a network, a professional association, etc. The financing of studies may be necessary to accompany the installation of the PL (Carrefour), to diagnose and select sites (for example within the context of a call for projects as in the cases of RATP and La Caverne) or to manage the operation (Doulon Gohard).

### **2.2. The selection procedures**

The "selection tools" encountered through the analysis of the projects in our sample are: the Call for Expression of Interest (CEI), the Call for Applications (CA), the Call for Projects (CP), the Restricted Competition (RC) and the Mutual Agreement (MA). We describe these different tools in order to compare them.

#### *Call for Expression of Interest (CEI)*

The aim is to stimulate innovative projects and to bring out new areas of expertise with a consultation phase (identification of stakeholders and PL). The owner/site manager/public or private planner has an idea of urban farm, such as "a mobile agricultural greenhouse" (Cité des Indes). The PL is not very autonomous in the setting up of his project since the project is put in place in close connection with owner/site manager/public or private planner. For a project manager, the CEI refers to "a fuzzy procedure, we wait to see what the project leaders can propose to develop our idea".

*b) Call for Applications (CA)*

The objective is to select one or several qualified UAPL to operate a site whose surface is at least always well defined (and sometimes other specific characteristics of the site : water resources, accessibility, specific constraints). The owner/site manager/public or private planner leaves the possibility for a candidate to come with his project. In the « classic » case of a candidate search in rural context, the CA is commonly used (particularly by the SAFERs and the Agence des Espaces Verts (AEV in Ile-de-France).

*c) Call for Projects (CP)*

In this case, applicants submit a project within a given framework. The content of the project is free, but must be achievable and consistent given the ambitions and constraints of the sites. Material, financial and/or personalised assistance may be accorded to the selected applicants. The sites to be operated are not always defined. For example, the municipality of Paris launched a first CP in 2013 to find UAPLs and then found appropriate sites in the city (e.g. V'ile Fertile). In 2016, the same municipality launched another CP (e.g. «Les Parisculteurs») with an inverted logic : the sites were first selected and well defined and then proposed to candidates (e.g. RATP and La Caverne).

*d) Closed Competitions (CC)*

In a CC, the municipality, on the basis of the opinion of a panel of experts, selects a project in order to award a public contract to the selected applicant. CC are often used in the area of architecture. For example, in the case of the Romainville's farm, the winning group was made of architects, a landscaper and engineering consultants, including a specialist in urban agriculture. This group will not be the UAPL : another selection procedure will have to be organised to search for a candidate. To our knowledge, this is the only example that used CC for an UAP.

*e) Mutual Agreement (MA)*

At the request of several meetings, the land owner and UAPL agree on the term of the agreement (period, sharing of resources and services, financing, etc.). Most of the times, the project is not very innovative and the land owner does not contribute to define the project.

### **3. Discussion and interpretation**

By cross-checking the strategies defined in the paragraph 2.1 and the selection procedures defined in the paragraph 2.2, we can draw useful elements we can draw useful elements to discuss the origin of UA projects (Tab.3). However the selection of candidates does not yet seem to be governed by rules, so the results are difficult to generalise. It was then observed a diversity of possibilities to select a project that is adapted to each context.

#### ***3.1. The revelation of a project generally requires a "mutual agreement" approach***

The MA characterizes the meeting between the contracting authority and the future projects developer that have been considered to be at the initiative of the PL. We note that for these cases, they are the oldest of our survey panel and the PL concerned the urban farms types that are considered by the most as a pioneers in France.

The MA is complicated to put in place, or even impossible, for the municipalities. In fact, the municipality can not allocate its land to a third party without being any competition. However, the municipality can accompany the PL in the elaboration of an application for a grant and a provision of land. This is also why the municipality of Paris, for example, often goes through different CP (example

Innovative Planting and Parisculpteurs) to allocate sites that will be made available through a convention of occupation of the public domain. If the occupation of the parcel is commercially exploited a special fees are requested.

For two specific sites (Carrefour and the Pullman Hotel), the PL and the owners also agreed through a private agreement procedure.

*Tab. 3. The crossing installation strategies criteria and selection procedures*

Projects	Installation strategies	Selection procedures
Projet Paysan urbain	REVELEAD by the PL	MA
Moultoux		MA
Mendes France		MA
Pot'iront		MA
Toit tout vert		MA
Cité des Indes	PROJECTED by the site's owners or manager	CEI
Montévrain		CEI
Concorde		CEI
Jardins Perchés		CA
Bougival		CP
Ferme de Romainville	HYBRIDATION	CC
La Caverne		CP
RATP		CP
V'île fertile		CP
Doulon Gouhard		MA + CA
Fosse Sablonnière		CA
Carrefour (HLR)		MA
Hôtel Pullman		MA

### **3.2. Projecting projects: ambiguity in selection procedures?**

The 5 projects that we considered as projecting according to a prerequisite of the project management, we note that they adopted or will adopt 3 different selection tools: the CEI (for 3 projects), the CA (1) and the CP (1).

3 out of 5 “projected project” have used (or will use) the CEI. By analyzing the different contents of the Call, we identified two main cases. Either the project owner has a complex concept and is looking for a team that can carry out the concrete realization of this project. This is the case of the City of the Indies and the Concorde district who want to develop a productive and mobile greenhouse in a metamorphosing neighborhood or a greenhouse integrated into a noise barrier. Candidates who answer or will answer to these calls express their interest in integrating the project. The second case, the project

owner has designed and piloted a project and then look for a trained candidate to manage the site. For the CEI launched for the plain of Montévrain, an application file was asked, which gathers documents concerning the candidate profile and the detailed description of the agricultural project (selected productions, methods, marketing systems, surfaces required). In the description of the site, feasibility elements are specified on the land, (investments), tillage, cultural practices and marketing (organic production and direct selling privileged). "These hypotheses have only value of recommendations. Candidates can naturally propose alternatives as well for the cultural associations and for the marketing strategies. On the other hand, the economic and social vocations described above take on a prescriptive character". This CEI is very close to the CA, but the CEI seems more focused on collective and evolving projects

If we take into account the CA of the project of Jardins Perchés, the aim of the contracting authority was to install an urban farm in a residential area consisting on: an urban greenhouse on a roof, and ground surface. The goal through the launch of this Call for Application was to find a candidate to exploit the site already well thought out by an agricultural AMO and an architect. Candidates could, for example, come from training courses at the agricultural school partner of the project. Failing to have independent and competent candidates, a company developing aquaponics projects was selected. The engineering of the project has evolved considerably, so we can wonder if the most suitable procedure should not have been a call for expression of interest instead.

Another ambiguity appears in the CP for the transformation of a football field into a farm based on permaculture principles (Bougival). The municipality was looking for a candidate to operate a well-defined site with a strong requirement for the techniques to be used. The call for projects attracted more groups rather than single candidates. The Contracting Authorities Assistance (CAA) recognizes that the procedure was not really adapted. Should not we have adopted a Call for Applications?

Based on the case studies analysed, we note that the initial expectations before the launch of a selection procedure can change significantly with the analysis of the applications, because new opportunities / ideas appear.

### ***3.3. A projected urban agriculture project requires one or even some expertises***

10 projects out of 18 benefited from feasibility or engineering studies to accompany the project owner to explore the principal issues and to accompany the PL in his installation (regulation, contact with key players, technical constraints, etc.). There are 3 types of CAA: a study office alone, a group of consulting firms or a professional agricultural installation (Terre de Lien, Chamber of Agriculture etc.).

When a project owner has a vision, an ambition for its site, its territory, he does not always collaborate first with a project leader. Not always familiar with the actors of urban agriculture, he prefers to finance feasibility studies and be accompanied by a CAA. In all the examples of our project panel, projects that are projected have benefited from a CAA. Indeed, the contracting authorities do not always know the field of possibilities and the specificities of this new market (actors, costs, operation). They are not all able to do a market analysis, to propose occupancy agreements (nature of the agreement, duration, amount of rent), to anticipate insurance costs (risk of collapse, d infiltration for a roof for example), to define the quality of space in the Local Urban Plan etc. New consulting firms are emerging to support communities and businesses to work on the feasibility of their urban agriculture project.

### ***3.4. Hybridization, a co-construction "framed" by a call for projects or launched by a Call for applications***

According to Table 3, for the hybrid project two call have been adopted the CP and the CA. The CP is a way of encouraging private landowners to make land available to them. The Parisculteurs project with the signature of a charter for the cultivation of 100 hectares shows the influence of public authorities in the development of UA projects (Colle et al., 2017).

The other tool mobilized is the CA. For the project of Doulon Gouhard, the objective is the re-installation of the agricultural activities within a development operation. The AMO and the contracting authority have decided to proceed with a "mutual agreement" for people considered as "essential" and a call for

applications to select 2 or 3 additional candidates with the support of agricultural organisations. The idea is to create an archipelago of PL who will work together on the overall project and on crosscutting issues. This form of appeal is commonly used in the agricultural domain, will it also be used in urban context ?

The difference between the CP and the CA could be that in the first case a collective proposes a project, while in the second case the collective is created after selection of the candidates. We observe that when the idea comes from the owner of private spaces, they use the MA.

#### **4. Final Remarks**

Urban farm projects can be revealed through a dialogue, projected from an intention or born from in-between. Whether they are initiated by a municipality and/or by a stakeholder from agricultural profession in a rural context, they tend to become agricultural urbanism projects to which a double problematic arises : integration into the urban fabric on the one hand and the viability and sustainability of the project itself on the other hand. That is a recent exercise in the history of agriculture, which shows the emergence of new tools for setting up agricultural projects in urban areas. Therefore, the adequacy of agricultural activities in urban areas often requires complementary studies that generate an additional cost for urban development operations.

The selections of projects and candidates do not yet seem to be governed by rules, but through various exchanges with concerned actors: it seems important for them to share experiences. In fact, according to the political, social and economic contexts (Allen, 2003), UAP implementation trajectories differ. It would be relevant to complement this study to better inform these territorial contexts and to add a temporal variable to the analysis in order to detect the installation trajectory. Indeed, it would be interesting to investigate the factors that influenced and determine the project trajectory and their influence on the project sustainability. One might even wonder which procedure is the most efficient in terms of time and for which types of projects. As urban farm projects are still young, many observations remain to be made.

## Literature

- Ackerman, K. and al. 2014. Sustainable Food Systems for Future Cities: The Potential of Urban Agriculture. *The Economic and Social Review*, Vol. 45, No. 2, Summer, 2014, pp. 189–20
- Aggeri, G. 2010. *Inventer les villes natures de demain, gestion différenciée, gestion durable des espaces verts*. Educagri éditions. ISBN : 978-2-84444-775-3. 198p.
- Allen, A. 2003. Environmental planning and management of the peri-urban interface: perspectives on an emerging field. *Environmental planning and management. Environment&Urbanization* Vol 15 No 1 April 2003
- Aubry, C., Daniel, A-C. 2017. Innovative Commercial Urban Agriculture in the Paris metropolitan area. *Urban Agriculture Book Series Toward sustainable agricultural-urban relations: innovation, integration, governance*. Springer.
- Aubry, C., Daniel, A.-C., Nasr, J. 2017. Organizing the urban agriculture movement: actors and networks in and around Paris. In: Rob Roggema, dir., *Agriculture in an urbanizing society Volume two. Proceedings of the Sixth AESOP Conference on Sustainable Food Planning* (p. 1123-1140). Newcastle upon Tyne, GBR : Cambridge Scholars Publishing.
- Aubry, C., Pourias, J., Daniel, AC. 2015. Urban agriculture in France: renewal and innovations. Paru dans l'ouvrage : *Agricultura, urbana integral, ornamental y alimentara, Una vision global e internacional*. E.T.S Agronomoa UPM, ciudad Universitaria. Madrid. 520p
- Daniel, AC. 2017. Fonctionnement et durabilité des micro-fermes urbaines, une observation participative sur le cas des fermes franciliennes. Rapport d'étude. Paris, Chaire ParisTech "Eco-conception des ensembles bâtis et des infrastructures"/Vinci., 77p.
- Colle, M., Daniel, AC., Aubry, C. 2017. Call for projects « Parisculteurs » : catalyst for urban agriculture development on rooftops in Paris. Participation at the "Green Cities" conference. Bologna. In the process of publication.
- ESSEC. 2015. *Végétaliser les villes de demain, quels enjeux pour l'immobilier ?*, Cahier #3 Chaire Immobilier et développement durable. 152p. ISBN : 978-2-84444-775-3
- Le Blanc, J. 2011. Installation agricole : nouveaux profils, nouvel accompagnement. *POUR*, 2011/5 (N° 212)
- Parquet, M., Le Coq, J.F. 2017. Installation des jeunes agriculteurs et pluriactivité au Costa Rica. *Cahiers agricultures*, Volume 26, Number 1, Janvier-Février 2017
- Roggema, R. 2017. Identification of Space for Urban Agriculture through Transformative Governance. *Nordic Journal of architectural research*.
- Viljoen, A., Schlesinger, J., Bohn, K., Drescher, A. 2015. Agriculture in urban design and spatial planning. *Cities and Agriculture: Developing Resilient Urban Food Systems*. Published by Henk de Zeeuw, Pay Drechsel. p 88-117
- UNEP. 2016. *Ville en Vert, Ville en Vie : un nouveau modèle de société*  
[http://www.lesentreprisesdupaysage.fr/documentsefficacy/07%20COMMUNICATION/Relations%20et%20communication%20presse/Dossiers%20et%20communiqués%20de%20presse%20grand%20public%202016/2016-13-21%20Sondage%20Unep%20Ifop%20-%20Attentes%20des%20Francais/Unep-Ifop-2016\\_Villes-de-demain\\_20160321.pdf?id=19774](http://www.lesentreprisesdupaysage.fr/documentsefficacy/07%20COMMUNICATION/Relations%20et%20communication%20presse/Dossiers%20et%20communiqués%20de%20presse%20grand%20public%202016/2016-13-21%20Sondage%20Unep%20Ifop%20-%20Attentes%20des%20Francais/Unep-Ifop-2016_Villes-de-demain_20160321.pdf?id=19774)
-

## **Planning urban food together. Theoretical approaches to urban food planning practice in a complex, pluralistic society.**

**Paul de Graaf**

Wageningen University and Research Center, Rural Sociology, NL

Urban food initiatives and alternative ways of farming are recognised as valuable contributions to society and are considered by many to be relevant to the future of our food system. How to make place for and make use of this relevance and value in planning is still a question which governments at different levels struggle with. This positioning paper proposes a theoretical framework for the study of sustainable urban food planning, focusing on the interaction between governmental and societal actors in spatial planning of urban food initiatives, as well as a methodology to confront these theoretical assumptions with experiences from the urban food planning practice in a case study research. The paper aims to contribute to a better understanding of the practice of urban food planning, its spatial strategies, the actors involved and their roles and relations. Learning more about how planning can play a role in supporting urban food initiatives and include their bottom-up perspectives, might help to improve planning and to manage expectations on both sides about what planning can and can not do. Planners face a combination of environmental and social challenges: planning in and for a pluralistic, participative society, and planning for sustainable goals related to an unknown future.

The paper investigates conceptualisations of planning relevant to these challenges, such as advocacy planning, complexity planning and self-organisation, and identifies possible strategies from these theoretical positions that are or could be applied in the practice of urban food planning. This planning-theoretical approach is augmented with concepts from social theory concerned with civic initiatives and grassroots innovation movements. These concepts offer an understanding of how planning can work with the multiple frames and perspectives of actors within the urban food movement. The underlying thesis is that this understanding will help to more effectively include the resourcefulness of these movements and initiatives in urban food planning in particular and in planning for a sustainable and equitable society in general.

### **Introduction: planning in a complex, pluralistic society**

Most planning theorists acknowledge that society can no longer be seen as homogeneous but should rather be understood as pluralistic, containing a multiplicity of actors with different, often contesting agendas, frames and world views. It is also generally agreed that society is a complex phenomenon that defies the systems and rational planning approaches that were developed in the 50s and 60s. However, how planning should operate in this complex, pluralistic society is a matter of debate: how should decisions be reached, on what grounds and by whom when there is no single truth nor a single representative of this truth? Some planning theories try to retain the role of the planner as an more or less neutral agent of public interest, or as a pragmatic negotiator between different interests, and try to formulate ways for planning this complex system in a more open democratic way. Others see a role for planners as advocates for under-represented views in planning, becoming one of the actors in the complex system, and engaging in the democratic process, giving up the planner's (perceived) neutral position (Allmendinger, 2009). The uncertainty of future events and the unpredictability of complex systems, in the face of a societal demand for a sustainable future, adds further to the problem of decision making in planning. On what grounds can planning decisions be based for unknown future conditions? What role has the planner in this increasingly complex and contested context?

The practice of urban food planning offers a testing ground for different planning approaches that might offer answers to these questions. The topic of food has long been overlooked in planning and design (Pothukuchi & Kaufman, 2000) but in the last 20 years the conviction has grown among planners that food plays a vital role in society and is an essential ingredient in the sustainable development of cities and countryside (Viljoen & Wiskerke, 2012; Ilieva, 2016). It is a relatively new field with a diversity of frames and perspectives on what a sustainable food system should be and on how planning can contribute to realising this.



Urban food planning involves a wide range of engaged actors, both in theory and in practice. It includes planning practitioners, activists, government officials and scholars (Ilieva, 2016), as well as entrepreneurs and other non-food actors (Van der Schans, 2016). There is a shared sense of urgency which makes that urban food planning as a field of academic thinking has a relatively strong link to practice and societal actors. However there is a gap between the bottom-up initiatives by a variety of societal actors and governmental top-down planning. Civic initiatives, social entrepreneurs and pioneer farmers play an important role in urban food planning. Together they form an urban food planning practice that works from knowledge and experience based in practice. These urban food practitioners work from a variety of political and social perspectives. Some aim to improve the current system, others present alternative models and realise instances of alternative food futures (Tornaghi, 2012). The aims, strategies and actions of these initiatives do not always fit the government's views and policies.

In the Netherlands the participation of societal parties is encouraged by the state. However, planners at local, regional and national government level struggle to facilitate urban food initiatives and include them in their planning efforts. And often these initiatives are labelled in a way that does not correspond to their intentions and ambitions. In response to this, different strategies are developed by initiatives to work within this complex and sometimes contradictory policy environment. Often these strategies have a direct or indirect relation with spatial planning.

Spatial planning of urban food initiatives concerns the allocation of space for food production and other food related functions in and around cities, as well as planning of infrastructure (e.g. transport, waste, etcetera) and the spatial organisation of these functions according to social, economic and environmental goals.

This paper presents a theoretical framework for studying how this bottom-up urban food planning practice functions, more specifically its spatial aspects and what lessons can be learnt from it.

## **Method**

Which concepts of planning allow for the constructive inclusion of bottom-up actors and stakeholders and their respective frames and perspectives on a sustainable food system in spatial planning? To answer this question an overview of different planning concepts that deal with the dual challenge of complexity and pluralism is made and ordered around the strategies these concepts suggest and the position of the planner (and other actors) in this. The relevance of this theoretical overview is illustrated by matching the potential strategies with recurring problems in urban food planning in the Dutch / Western European context. This theoretical framework will be used to guide a multiple case-study of urban food planning in practice.

## **Theoretical framework: conceptualisations of planning**

There is a general consensus in planning theory that society as a socio-technological system is too complex to rationally understand, let alone model or plan as systems planning aims to do. Although some systems planners believe increased computational power can solve this, for other planners this is the reason to take a more modest and more pragmatic approach towards planning. Some combine this with a belief in the self-regulating power of the market, others call for a more engaged and politically informed planning advocacy planning (Allmendinger, 2009). More recently complexity science has inspired planners to approach society as a complex, adaptive system one can work with on its own terms. Concepts like self-organisation can help understand spontaneous developments in society, and this understanding can provide a base for alternative planning strategies (Rauws et al., 2016).

The understanding of society as a complex adaptive system is related to the notion of pluralism. It acknowledges independent actors that act according to their own agendas. Their combined behaviour and the emergence of patterns of organisation can be considered self-organisation. The way they consciously organise themselves independently from the state or other overarching structures can be called self-governance. This distinction is helpful in understanding bottom-up civic initiatives and how planning can constructively deal with these initiatives (Rauws, 2016). This research considers these

conceptualisations of planning for a complex and pluralist society, from advocacy planning to complexity planning, to be relevant for urban food planning.

Urban food planning is driven by a clear focus on transition, fuelled by societal concerns about sustainable food and our living environment. What the actors involved in urban food planning have in common is the goal to change the current food system to a more sustainable and equitable system. They also find each other in the conviction that the city plays a central role in a sustainable food system and that the 'metabolic rift' that separates the city from its food sources should be mended (Dehaene et al, 2016).

However, the question of decision making in urban food planning remains. From a transition perspective urban food initiatives can be considered as socio-technical niches that need to be scaled up as part of the transition towards a sustainable food system (Ilieva, 2016). This presupposes a more or less fixed idea of an ideal food future that needs to be supported by planning. Different pathways are distinguished but the outcome is not debated. This is problematic as it ignores the variety of frames and perspectives that characterise the discussion about the future of our food system. There is a strong and heated debate between proponents of alternative re-localised agri-food systems versus those working from the perspective of conventional de-localised agri-food systems (Broekhof & Van de Valk, 2012). The former see an activist social and political role for agri-food systems in creating a more equitable and sustainable society (Tornaghi, 2012), while the latter consider themselves part of a modernist tradition of societal progress. Between these poles there is a range of attitudes towards local versus global, high-tech versus low-tech, urban versus rural, top-down versus bottom-up. Each have their strengths and weaknesses but which get priority within the limited possibilities of spatial planning? From a complexity perspective a societal outcome will emerge from the systemic interactions between different urban food initiatives and their context. Planning should provide the right conditions for this emergent self-organisation of initiatives to develop (or not). At first glance this might leave the decision making to the system, but what are the right conditions to guide the 'right' kind of emergence and who decides this?

Normative moderation of decision making in planning remains necessary. Planners should acknowledge and understand the perspectives of different actors and stakeholders and base planning decisions on a fair hearing of their different voices in the debate. The STEPS approach to grassroots innovation (Leach et al, 2007) offers a method that considers power imbalances, identifying dominant views (backed by the power of the state and/ or multinationals) and alternative views (developed by people in their local context). It aims to advocate under-represented voices coming from non-professional actors in policy making by letting them be heard in the societal debate. As a form of advocacy planning in a complex adaptive society this approach might help decision making in urban food planning.

The notion of a grassroots innovation movement is very relevant to urban food initiatives. Its definition in relation to urban food planning needs to be broader than just the local community, though. In the context of grass roots innovation in second and third world countries Smith et al. (2013) argue the definition should include professional support from outside grassroots communities (including engineers, designers and planners). In the context of urban food planning it should also encompass social entrepreneurs and pioneer farmers that strictly speaking are SMEs but that in their approach to innovation share many similarities with grassroots innovation movements.

### **Spatial planning of urban food initiatives**

Efforts in the cities of Rotterdam and Ghent to plan for urban agriculture can illustrate the challenges in a Western-European context for this new field within the discipline of planning. In Rotterdam 'Edible Rotterdam', a bottom-up initiative consisting of engaged citizens with a professional background in relation to food and planning, proposed a spatial planning approach that included urban food initiatives. They developed a spatial vision on urban agriculture that proposed spatial matches between urban needs and agricultural services fulfilling these needs as a basis for planning urban food initiatives (Graaf, 2012). It was based on the observation that the services urban agriculture claims to render for the public good, only have the desired effect when located in the right location. E.g. an urban farm located in the periphery encourages visitors to come by car, rather than by bike or public transport and thus limits its potential for reducing food miles. Similarly there are logistic and economic limitations to the use of local

waste resources that need to be considered in planning. Often these considerations are included too late, or not at all, in the choice of location.

The Rotterdam municipality acknowledged the benefits of urban agriculture but took a more reactive role, and leaving the initiative to private parties such as SMEs, social housing corporations and citizens (Van der Schans & de Graaf, 2016). Few attempts were made to pro-actively engage initiatives in achieving policy goals such as social cohesion, climate adaptation and mitigation and resilience, through spatial planning. Structural limitations such as limited timeframe for temporary use or the allocation of locations in relation to other functions from a circular perspective were not addressed on a policy level. In Ghent the municipality developed a more pro-active vision on space for agriculture in and around Ghent, as part of their vision for a climate neutral Ghent in 2030. The vision aimed to encompass both intra-urban and peri-urban initiatives, including all the farmers within municipal boundaries. Based on a study of agricultural and spatial trends in the area the vision stated that all agriculture in and around Ghent (whether professional or civic) should be city-oriented agriculture to be able to survive. The vision distinguished zones, for which preferred beneficial forms of (peri)urban agriculture were defined. How to engage all actors in the implementation of this vision, especially the existing farmers, after its completion is still an open question.

The Ghent case shows that intra-urban food initiatives and peri-urban food initiatives involve different actors and also different levels of government. Peri-urban agriculture involves professional farmers and gardeners and has to deal with provincial and national laws and regulations. Intra-urban agriculture involves civic initiatives and social entrepreneurs and is subject to urban legislation. However in the context of an expanding city they are confronted with the same challenges, albeit in different locations with varying spatial conditions. Inside the city space has to be found in underused or temporarily available locations or has to 'infiltrate' public green space. Around the city the residential, recreational, ecological and agricultural claims compete over currently mono-functional agricultural or recreational areas, creating opportunities for multifunctional city-oriented agriculture.

An example in Rotterdam of planned peri-urban agriculture is the polder Schieveen, farmland designated to become industrial area. Due to the crisis its destination was changed to peri-urban agriculture, but it is hard to find enough city-oriented farmers and accommodate the plans of those who are interested. Another example in the Rotterdam region, situated in a neighbouring municipality, is Buytenland van Rhoon; farmland that was designated to become nature area as a compensation for the expansion of the harbour. After protests a mix of nature and agriculture was proposed, with potential possibilities for city-oriented agriculture. But 10 years inconsistent policy has led to a status quo. The Province, who was the dominant planning authority didn't succeed in involving the complex of local actors and stakeholders, in a common vision for the future, despite the presence of some inspiring individual examples of city-oriented farms in the area.

### **Discussion: potential for operationalisation of planning concepts in spatial planning of urban food initiatives**

The Ghent and Rotterdam cases show different approaches to governmental planning of urban food initiatives as well as planning efforts by the initiatives themselves. They provide valuable experience of the interaction between the two and the grey area in which they meet. Confronted with these examples from practice the tentative theoretical framework outlined in this paper suggests a number of strategies for planners in urban food planning that hold potential for application in urban food planning. Planners working at a government agency or as a consultant for such an agency can consider how to make room for civic initiatives and grassroots innovation and even support them by creating the right conditions for a diversity of these initiatives to be tried out and tested (self-organisation), exploring and keeping open multiple pathways to sustainable futures. Independent planners can become initiators themselves and with an understanding of the system navigate the complexity as the agent of a specific perspective (self-governance), and make the case for a specific pathway to be opened or kept open. Reversely this would suggest that initiators can become urban food planners, too, if they understand how to work with the system.

This brief overview suggests that these planning approaches and related theories are complementary rather than competing ways of looking at the world. Also it suggests that the applicability of the strategies they propose is relative to the position of the planner and the local context. This interdependency will be studied by looking at the development of urban food planning over a period of time in a number of city regions. Using sensitizing concepts such as self-governance and self-organisation insights from practice are developed into a grounded theory that than is compared and informed by further theoretical insights from the aforementioned theories.

### **Conclusions and next steps**

Urban food initiatives and alternative ways of farming are recognised as valuable contributions to society and are considered by many to be relevant to the future of our food system. How to make place and make use of this relevance and value in planning is still an unresolved question to governments at different levels. Learning more about how planning can play a role in supporting urban food initiatives and include their bottom-up perspectives, might both help to improve planning and to manage expectations on both sides about what planning can and can not do.

How different conceptualisations of planning and strategies derived from them can inform urban food planning in practice, and the questions this poses about representation, power and agency is the object of study in the next phase of this PhD research. The research is designed as a retrospective, trans-disciplinary case study, studying the practice of urban food planning, using perspectives from planning theory as well as the wider field of social theory. It will look at three cases of urban food planning in practice, what approaches are used and how different actors deal with complexity and pluralism in planning a sustainable food system. It will study how different frames are represented in local urban food planning and what discourses are used and applied by different actors. Finally, It will look at the role(s) of planners in dealing with this complex of governmental and non-governmental agendas.

## References

- Allmendinger, P., 2009, *Planning Theory* (2nd edition), Palgrave MacMillan, Basingstoke, UK
- Broekhof, S.M. & Valk, A. van der, 2012, Planning and the quest for sustainable food systems: explorations of unknown territory in planning research, in: Viljoen, A. & J.S.C. Wiskerke, *Sustainable food planning. Evolving theory and practice*, Wageningen Academic Publishers
- City of Ghent, 2015, *Visie op landbouw in de stedelijke omgeving van Gent*, accessible via: [https://stad.gent/sites/default/files/page/documents/20150324\\_NO\\_Eindrapport%20Visie%20op%20Landbouw%20-%20kv.pdf](https://stad.gent/sites/default/files/page/documents/20150324_NO_Eindrapport%20Visie%20op%20Landbouw%20-%20kv.pdf)
- Dehaene, M., C. Tornaghi, C. Sage, 2016, Mending the metabolic rift: Placing the 'urban' in Urban Agriculture, in: Lohrberg et al., *Urban Agriculture Europe*, Jovis Verlag, Berlin
- Graaf, P.A. de, 2012, Room for Urban Agriculture in Rotterdam: defining the spatial opportunities for urban agriculture within the industrialised city, in: Viljoen, A. & J.S.C. Wiskerke, *Sustainable food planning. Evolving theory and practice*, Wageningen Academic Publishers
- Ilieva, R.T., 2016, *Urban Food Planning: Seeds of Transition in the Global North*, Routledge, Abingdon, Oxon
- Leach, M., Scoones, I. and Stirling, A., 2007, *Pathways to Sustainability: an overview of the STEPS Centre approach*, STEPS Approach Paper, Brighton: STEPS Centre
- Schans, J.W. Van der, et al., 2016, It's a business! Business models in Urban Agriculture, in: Lohrberg et al., *Urban Agriculture Europe*, Jovis Verlag, Berlin
- Pothukuchi, K. & Kaufman, J. L., 2000, The food system: A stranger to the planning field, in: *Journal of the American Planning Association*, 66(2), p. 113–124.
- Rauws, W., 2016, Civic initiatives in urban development: self-governance versus self-organisation in planning practice, in: *Town Planning Review* 87(3): p. 339-361
- Rauws, W., G. de Roo & S. Zhang, 2016, Self-organisation and spatial planning: an editorial introduction, in: *Town Planning Review* 87(3): p. 241-251
- Schans, J.W. van der, P.A. de Graaf, 2016, Chapter 3.3: Food and non-food private sector engagement in the CRFS Rotterdam, with a focus on the role of social housing corporations, in: Dubbeling M., J. Carey, K. Hochberg (eds.), *The role of private sector in sustainable and resilient city region food systems*, RUAF, Leusden (NL), accessible via: <https://cgspace.cgiar.org/rest/bitstreams/89163/retrieve>
- Smith A., M. Fressoli, H. Thomas, 2014, Grassroots innovation movements: challenges and contributions, in: *Journal of Cleaner Production* 63 (2014) p. 114-124
- Tornaghi, C., 2012, Public space, urban agriculture and the grassroots creation of new commons: lessons and challenges for policymakers, in: Viljoen, A. & J.S.C. Wiskerke, *Sustainable food planning. Evolving theory and practice*, Wageningen Academic Publishers
- Viljoen, A. & J.S.C. Wiskerke, 2012, *Sustainable food planning. Evolving theory and practice*, Wageningen Academic Publishers

# Transformations and innovation in the Veneto region agro-food system

Marta De Marchi

University Luav of Venice, Italy

---

## 1. Introduction

The actual demographic trends (UNDP, 2006), the progressive suburbanisation of territories (Fanfani, 2006) and the recent economic crisis, are drawing a new urban scenario that needs new way to approach territorial planning and urban design. Bernardo Secchi defines the particular condition of the contemporary city as the “New Urban Question” (NUQ), resumed through three big themes, intertwined among them, that we should consider as interdependent: the environmental threats, caused by urban and productive human activities; the growing social injustice; the mobility crisis, often related to services accessibility (Secchi, 2010).

The Food System could be a “lens” through which look at the NUQ, in order to observe closer and understand specific problems of the contemporary urban areas. In this way we could obtain two results: to concentrate the focus on the NUQ from a specific point of view, the one of food flow; to study and to analyse the food system with the specific tools of urban planning and design.

If we look at the three main themes of the NUQ from the Food System perspective we can identify some specific problems. The environment is threatened by: the consumption of water and land for agricultural purposes; the CO<sub>2</sub> gas emissions related to transport and logistic; the energy consumption for producing, processing and stocking food, and for treating organic waste. The social injustice can exacerbate because of: problems related to the access to healthy and fresh food; unequal payments for agricultural producers; lack of transparency in communication to consumers. The mobility and energetic crisis can affect the food supply chain in terms of logistic, fuel availability, preservation of food.

All these problems are affecting a large number of territories, but if we want to imagine a proper food strategy, or a new alternative model, in order to make our food systems more sustainable and resilient, it is needed to start studying a specific area. This research aim at understanding an area characterised by a low dense urban settlements, rather than a hyper-dense metropolitan area, in order to show that even those European territories that are not affected by the typical metropolis problems (such as food desert, lack of local food, long supply chains, etc.), suffers some dysfunctions related to the food supply chain.

### 1.2 A paradigmatic case study: Veneto region

The Veneto region, located in the north-eastern Italy, is characterised, in its inner plain, by the urban configuration of the *città diffusa* (Indovina, 1990; Munarin e Tosi, 2005), also defined as a horizontal metropolis (Viganò, 2016), where people live and produce. It is a mixed urban and rural tissue where houses, factories and fields, are close one to another, and where welfare spaces, leisure and commercial places live together. This area has been studied by many scholars for a long time, and from different point of view, but it has never been observed from the food perspective.

As a majority of similar territories in Europe, Veneto region guests different scales of supply chains, from the very short and local, to the national and global ones. More than this, Veneto region is also a territory that produces a number of special and certified agricultural products, and where the agro-food industry is still remunerative, despite the big economic crisis of 2008 (Ferrario, 2009).

Even though food economies are so important, Veneto region is not provided with a proper food strategy; a number of sector policies were taken in the last decades to protect and promote agriculture, or rural landscape, or local food industry. In the same time, a number of food related enterprises, have acted innovative approach to improve their economies and to increase the level of autonomy from the global food system. Similarly, an increasing number of citizens is changing its shopping behaviours towards healthier and greener models, choosing the short supply chain, or organising autonomously in purchasing groups (ReteGAS, 2011). Even if the three territorial forces – policies, enterprises, citizens – are active and acting in the same region, they are not yet coordinated among them.

For all these aspects, Veneto region is an interesting case to understand spatial, urban territorial and landscape transformations related to the food system.

### **1.3 A matrix to read the food system**

The Food System, even in low density urban areas, is a complex mechanism that involves not only resources and people, but also spaces and policies. Experts agree in the definition of the food supply chain as a series of consequent phases: production, processing, transporting, stocking, distribution, consuming and wasting (Giseke, 2015). If we draw the supply chain scheme in form of a matrix (fig. 1), we can see how each phase of the chain is crossed by a number of “agents” that together shape the territory and its food system. There is a “physical” dimension, which involves input resources, spaces, places, outputs, and there is a more “non physical” dimension made by actors of the chain, policies, plans and practices activated.

In particular, in this research, the “cells” of these matrix are observed from the perspective of space: which kind of space and place did the Veneto region food system generate? How did the food dynamics transform cities and landscape across the decades? How do policies, plans and practices related to food influence spatial transformation?

This matrix can help the reading of a territory through its food system, and this research wants to apply this approach to the territory of the central plain of Veneto region, in Italy. The matrix, even though is built by single cell, permit to maintain a complete overview of the system, helping the observer in keeping a comprehensive eye on the entire chain. In the same time, it facilitates the analysis for each part composing the matrix itself, simplifying the research operation.

## **2. Paradoxes**

Looking closer at the matrix, and at the considered territory, it is possible to recognize some dysfunctions that are affecting the Veneto region, as well as other territories in the Global North: pollution of soil and water caused by fertilizers and pesticides; pollution of air and traffic congestion caused by food transport; food loss and waste caused by not efficient production or consumption; organic waste management costs.

If we merge these questions with the specific characters of the territory, we discover a number of paradoxes that are affecting nowadays the Veneto region food system.

In particular, this research analyses, and tries to represent with the tools of urbanism, four of these paradoxes, which concern specific parts of the supply chain. If we use once again the matrix in figure 1, we can highlight the parts involved by each paradox (fig.2): the first one involves producing and processing phase; the second one is located in the centre of the chain, where logistic and distribution systems are active; the third paradox is related to the end of the chain, in the consumption and waste management; the fourth one is more transversal and is related to the regional regulatory context.

The term “paradox” is chosen because it recalls very well the principle of a combination between positive and potential aspects, and problematic dysfunction that are compromising the effectiveness of those potentials (Collins, 2016).

In this sense, the territory of the Veneto central plain has been analysed and represented through visual tool such as schemes, maps and technical drawings, in order to understand (and communicate) the spatial form of the food system.

Each paradox will be described first of all in its components, such as territorial layers involved in the paradox (for example mobility network, agricultural crops, supermarket system, etc.). After that, the elements of potential typical of the territory considered, will be highlighted, as well as the “response” of the territory to counteract the paradox, both at the institutional and social level.

### **2.1 Paradox 1: Producing and Processing**

As said above, in Veneto region the agro-food production is a strong economy, with a number of special local products, some of the with quality certifications, such as Verona rice, Treviso red lettuce, and others (Veneto Agricoltura, 2016). In Veneto are also existing many big brand food industries, purchased in all the national territory and, in some cases, abroad too (for example Bauli, Rana, etc.). The majority of these special and remunerative products are produced in the central plain, mainly for two reasons. Firstly the morphological character of this part of the region, which in less than 60 km, from the sea to the

mountains, we can find more than ten different types of soil, which means a large variety of possible crops (Arpav, 2015). Secondly, the territorial configuration of human settlements and infrastructure, with a multi-level and widespread mobility system and a network of inter-modal hubs and food specific logistic equipment, that facilitate transport and connections.

The paradox emerges when, observing this efficient and organised network, we discover that in the same area there is also an high concentration of conventional agriculture, dependent on agro-chemistry and highly polluting, in a region that for decades occupied the firsts position in the national ranking of pesticides and fertilizers purchase (fig. 3). Surface and underground water resources have been threatened for decades, as well as fertile soils, and the contamination of the subsoil, especially in the northern part of the plain, is accelerate by the composition of soil, that is particularly permeable (fig. 4). In the last years, thanks to European policies of greening and protection of natural resources, the amount of used agro-chemistry products is decreasing (ISPRA, 2016). The paradox consists in the fact that conventional and not competitive commodities are in competition with local and quality products, for the same stock of resources, which are in risk because of the aggressive and intensive production model.

## **2.2 Paradox 2: Logistic and Distribution**

In many metropolitan food strategies, such as the Toronto, London or Paris ones, a strong importance is given to those models able to shorten the food supply chain. A local food system, in fact, can have several advantages: it supports local producers, it reduces the number of intermediates between producer and consumer, it promotes the consumption of fresh and seasonal products, it enhance the level of food autonomy of a territory.

Veneto region, as described before, has a particular urban configuration, characterised by the mixité of human activities (living, producing, working, resting, etc.). The diffuse settlements and the widespread minute mobility network are still guaranteeing the strong relation between cities and countrysides, urban fringes and natural environment (Tempesta, 1989; Ferrario, 2009). This configuration would also facilitate the short supply chain model, because the majority of citizens live or work not far from fields and producers.

However in Veneto region the use of large scale retail system is increasing, and a large amount of new supermarkets are rising (Veneto Agricoltura, 2005), especially in the urban fringe or close to high frequency infrastructure crossing the countryside.

This expansion is supported by a particularly efficient logistic system. The area of Verona, in fact, has specialised, in the last 50 years, in infrastructure for the food industry: large inter-modal hubs, sophisticated stocking systems, logistic enterprises are all concentrated in the area called “Quadrante Europa (Pilan, Nonveiller, 2012). The hub is located close to the city centre, served by two national highways that cross in Verona and, moreover, located at the intersection of two important European corridors (fig. 5). Both large and short supply chains benefit from the presence of this important mobility network.

The paradox is generate by the fact that often, in the supermarkets, customers could buy products that are produced quite close to their homes or workplaces, but the daily life rhythm drives clients to those places where they can potentially buy everything they need. Despite the widespread local mobility system, the permeable urban-rural interface, and the traditional diffuse network of temporary markets, large scale distribution is dominating the food system (fig. 6).

This paradox is based both on the offer of the supermarket and on the demand of clients; the price is paid by producers, who are strongly dependent from the large scale market that impose its standard in term of quantity, quality and aesthetics. There are other consequences derived from the massive use of supermarkets: customers tend to buy more than what they really need, in part because the supermarket offers cheaper prices for big quantities, in part because the access to the shop by car allows to bring home more quantities. This means more wasted food, more gas emissions, more energy spent for stocking fresh food.



### **2.3 Paradox 3: Consumption and Waste**

The final part of the chain is where food is consumed and, eventually, becomes waste.

Veneto region is recognised at the national level as one of the richest Italian region, with strong industrial and agricultural production (Istat, 2016). From the food perspective, the low dense settlements and the diffuse system of markets, small shops and supermarket, avoids the phenomenon of food deserts. Moreover, the territory is almost autonomous in terms of vegetables and poultry production, and the import is mostly concentrated on exotic fruits and livestock for processing special products (Veneto Agricoltura, 2016).

Despite these advantages, the region is not able to provide fresh and affordable food for everybody, and charity associations must work hard to help indigent families. Banco Alimentare is an important national foundation devoted to the collection and redistribution of food surplus; the Veneto office of Banco Alimentare in 2016 has helped almost 103.000 people with more than 5.000 tons of recovered food (Banco Alimentare, 2016). In 2017 the Italian Government approved a law finalised at facilitating and promoting food donation from supermarkets to charity associations incharged of assisting needy families (Camera dei Deputati, 2017).

Another paradoxical aspect of the Veneto region food system consists in the fact that, even if exists an efficient logistic system, specialised in the transport and commercialisation of food, a remarkable amount of food is lost along the chain. In particular, a certain part of edible agricultural products have not the dimensions or aesthetics standards requested by the wholesale market, and this means that farmers have to destroy part of their crops because they can not sell their products elsewhere.

The reasons are mainly related to production, processing and preservation of products, but the majority of food waste in Veneto, as in the rest of Europe, occurs in customer's house. Domestic waste, in fact, is responsible for the 70-75 % of the the national food waste yearly produced. Fortunately, citizens in Veneto are becoming increasingly aware about food waste, in fact they waste less food than the national average (6 euros per week, against 7 euros). However, they also are the most affected in Italy by the so called "shopping bulimia": in the 65% of cases (against the national average of 48%) customers buy more than what they really need for their home (Waste Watcher, 2017).

### **2.4 Paradox 4: Regulatory context**

The fourth and last paradox analysed in the research concerns the absence of a specific food planning tool in the Veneto region institutional framework. While the Region developed, in the last decades, several regional plans for waste, energy, mobility and other urban infrastructure, for the food system we can find "only" a number of sectorial programs, rather than a comprehensive food strategy.

This aspect is paradoxical under the light of a very important food economy, especially for export and for the certified products, that needs particular conditions to be produced, but also to be transported, stocked and sold.

It is possible to identify different reasons for this paradox. Firstly, food strategies were born firstly in highly dense metropolitan areas, as a response to several problem related to public health, food deserts, market iniquity, scale of the foodshed; in a low dense, agricultural territory, it seems not needed to develop a program to "solve food problems" probably because, apparently, none of the metropolitan food problems occur. Secondly, in Veneto region economic sector associations and category union are very powerful, and maybe they prefer to be free to organise themselves and their work, instead of negotiating with other stakeholders.

This paradox concerns the majority of the Mediterranean countries in fact, despite their strong food culture and their remunerative food economy, they guest few experiences on food planning or food strategies. If we look at Italy, the Expo 2015 has been the opportunity to start considering food as a urban issue and, in the case of Milan, it has been the driving force for the formulation of the metropolitan Food Policy. Similarly, other Italian area are experimenting the integration of food issues in the planning tools, at the regional scale (such as Tuscany or Apulia). In these cases food is associated to landscape and tourism, and it is assimilated in wider regional policies, rather than in a "stand alone" programme.

Veneto Region is paying attention to the questions of rural environment, in terms of agricultural economies, agro-tourism infrastructure and landscape protection. However the Region is still far from a comprehensive approach to the territorial food system, despite the importance of this urban material flow.

### **3. Responses from the territory**

As described before, each paradox is generated by the match between dysfunctional dynamics and territorial potentials. The partial autonomy of Regions in Italy, permits a certain control of territorial dynamics and the application of specific regulations formulated at the local level, and so, very strict to the region characters. In Veneto, for each paradox it is possible to identify a number of institutional actions, especially at the regional or local level, that try to counteract problems emerging in each phase of the supply chain.

In the same time, Veneto region is also a territory characterised by a history of medium and small enterprises, and where the territorial economy is particularly based on the individual initiative. This can explain why, despite the persistence of the paradox at the macro-scale, we can find a remarkable number of different models and approaches, both from enterprises and from citizens, at the micro-scale. It is possible to describe few experiences that tell something about regional social innovation and suggest small first steps of changing in the system, or, at least, of balancing the mainstream trend.

#### **3.1 Making large scale distribution with organic food: EcorNaturaSi**

In Veneto region, organic agriculture covers about 17.000 hectares of the rural surface, which means barely the 2% of the entire regional agricultural area, quite less than other Italian region, such as Tuscany or Trentino Alto Adige.

Despite this lack in organic production, Veneto is one of the regions with the higher number of shops and selling points inside supermarkets dedicated to organic food.

Particularly interesting is the case of EcorNaturaSi, a society based in Conegliano (Treviso) and born in 2009 from the union between Ecor, the biggest Italian organic products wholesale distributor, and NaturaSi, the main Italian supermarket network specialised in organic food (EcorNaturaSi, 2014). The company has a structure that can cover almost the entire supply chain, including a network of producers, a distribution infrastructure, a well known retail system, and a series of branded products (fig. 7). EcorNaturaSi offers to their associated producers informative and logistic support and this approach allows the company to increase, in the last years, the number of joining rural enterprises, interested in transform their economy. EcorNaturaSi, in fact, is able to support farmers interested in changing their conventional agricultural enterprise in organic crops, helping them with experts and with a structure that can guarantee them to sell their products. The transformation is not only economic, but also spatial: in these farms it is possible to reintroduce traditional rural elements, such as bushes, trees rows, water ponds, and others, which not only redraw the landscape, but also have a crucial ecosystem function (Brusegan, 2016).

In Veneto, the transition towards organic agriculture is growing, but it still meets some resistance. It is possible to imagine some reasons: the region has a strong intensive production and the organic model does not seem enough attractive to invest in the change, despite the possibility to access incentives; the organic supply chain is not yet well structured, and the market struggles to recognize an adequate payment for organic products; the awareness on environmental problems coming from conventional agriculture is still limited and insufficiently recognised by stakeholders.

However, even though organic farming is still a niche economy in Veneto, the increasing number of new farmers interested in organic agriculture is a signal of changing (Veneto Agricoltura, 2015).

#### **3.2 A local supply chain: Tonon's breeding farm between milk vending machines and cheese factory**

In Italy exist about 1.300 vending machines of rough milk, that has not been processed like the one sold in the supermarket, that needs to be transported and stocked for longer periods. The rough milk, in fact,

to be sold through the machines, has to be produced every day; this means that it has also to be local and produced close to the selling point, in order to guarantee certain quality and nutritive characters (Ministero della Salute, 2013). The proximity of production place has a number of advantages: the short supply chain allows to reduce costs of transport and intermediation; the short distance reduces gas emissions and fuel consumption; the product is always very fresh and rich in nutrition substances (Milkmaps, 2016).

An interesting case is given by Danilo Tonon, a farmer from Paese, in the north-eastern part of Treviso province, with a very small livestock with few cows, which feeding is produced inside the farm, and that live outside for the major part of the year. The milk is sold through two vending machines, located close to the farm, in residential areas, close to schools and sport facilities. The closest machine is located at 500 mt from the farm, the farthest at 7 km, and the milk is sold at 0.90 euro per litre. Another consistent part of the milk produced is sold to a local cheese factory called Latteria Sant'Andrea, which is located at 13 km from Tonon's farm. The Latteria is a cooperative specialised in production of typical cheeses of Veneto region, and it buys the milk exclusively from farmers based on Treviso province. Cheeses are sold in a store inside the factory, in two branded shops (located about 10 km from the factory) and inside local neighbourhood and farmer's markets (fig. 8). This small factory is able to generate a local market, processing local rough commodities, putting local small producers in a network, using alternative distribution system to sell the products. Producers involved in this local chain can count on a constant and quantifiable demand of rough milk, and they can integrate the cheese factory supply with autonomous distribution through the vending machines.

This example tell us about two aspect of the territory. The first one concerns small producers who chose to detach their economy from the large scale supply chain, in order to survive in the market, taking advantage from the strong personal relation with other farmers and processors. The second one is related to the territorial configuration that allow small producers to survive and to sell their products to a certain number of citizens, even though the scale of their economy can not compete with big famous national brands, that are sold in the supermarket.

#### **4. Conclusions and perspectives**

Analysing the food system of a specific territory is always a complex operation because, as shown by the matrix, many elements enter the scheme and activate a number of dynamics and interrelations.

The approach through paradoxes allow us to consider specific and localised implications of global food questions, which take shape differently according to the territory where they occur.

Urban design offers a new way to read these paradoxes through the use of analytical maps and drawings, that are able not only to describe a context, but also to suggest potentials and even possible solutions. Even though the dominant model is dysfunctional and seems to be hard to change, the territory itself, thanks to its citizens, enterprises and administration, can offer interesting starting points for future transformations.

For these reasons, the approach in this research has been based not only on scientific and technical tools, but also on small tales of innovation and alternative models.

The perspective for this research is to use the same tools (maps, scheme, interviews, redrawing, etc.) and the paradox approach to compare Veneto region to other low dense rurban areas in Europe. Starting from the medium scale of a region, it is possible to understand better the large scale food system dynamics, as well as small scale proofs of alternative food systems. To compare similar territories can give us information on the state of European disperse rurban regions, and can offer a number of possible alternative solutions to certain questions related to food flows, both at the regulatory level and at the private initiative one.

The research is still ongoing and the experimental approach is far from a precise definition, but the practical approach of looking small dynamics and territorial interdependencies have helped in defining, at least partially, the profile of the regional food system.

## Bibliography

- Arpav, Agenzia Regionale per la Prevenzione e Protezione Ambientale del Veneto, *Carta de suoli del Veneto*, Venezia, 2015.
- Banco Alimentare del Veneto, data available at the link <http://www.bancoalimentare.it/it/veneto>, retrived on 28/07/2017.
- Brusegan, E., *Dalla cura della terra al riuso del paesaggio*, in *Pièra*, n° 04, September 2016, 82-91
- Camera dei Deputati, *Donazione di prodotti alimentari e farmaceutici per solidarietà e Limitazione degli sprechi*, Camera.it, [http://www.camera.it/leg17/522?tema=norme\\_per\\_la\\_limitazione\\_degli\\_sprechi\\_e\\_l\\_uso\\_consapevole\\_delle\\_risorse](http://www.camera.it/leg17/522?tema=norme_per_la_limitazione_degli_sprechi_e_l_uso_consapevole_delle_risorse), retrived 10/09/2016
- Collins English Dictionary, 2016
- De Carlo, N., *La crisi dei consumi dei prodotti alimentari dal punto di vista dei consumatori: un'indagine empirica realizzata nel Veneto*, Veneto Agricoltura, Padova, 2005.
- EcorNaturaSì, *Il Gruppo*, <http://www.ecornaturasi.it/it/il-gruppo> retrived on 28/10/2017
- FAO, *Global Food Losses and Waste*, Rome, 2011
- Fanfani, D. (2006). "Il governo del territorio e del paesaggio rurale nello spazio "terzo" periurbano. Il parco agricolo come strumento di politiche e di progetto". In *Ri-Vista. Ricerche per la progettazione del paesaggio*, 4(6).
- Ferrario, V., *Lo spazio agrario nel progetto di un territorio*, Tesi di Dottorato, University Iuav of Venice, 2007
- Giacomini, C., *Crisi e prospettive dei consumi alimentari in Italia e nel Veneto*, Veneto Agricoltura, febbraio 2006
- Giseke, U., Gerster-Bentaya, M., Helten, F. (editors). *Urban Agriculture of growing City Regions*. Routledge, New York, 2015.
- Indovina, F., "La città diffusa". In Indovina, F., (ed.), *La città diffusa*. Iuav- DAEST, Venice, 1990.
- ISPRA, Istituto Superiore per la Produzione e la Ricerca Ambientale, *Rapporto nazionale pesticidi nelle acque 2013-2014*, edizione 2016
- Istat, *La povertà in Italia 2016*, report 13/07/2017
- Milkmaps, *Che cos'è il latte crudo alla spina*, available on-line at the link <https://www.milkmaps.com/prodotti.php> retrived on 28/10/2017
- Ministero della Salute, *Latte crudo, una scelta consapevole*, available on-line at the link [http://www.salute.gov.it/portale/news/p3\\_2\\_3\\_1\\_1.jsp?menu=dossier&p=dadossier&id=10](http://www.salute.gov.it/portale/news/p3_2_3_1_1.jsp?menu=dossier&p=dadossier&id=10) retrived on 28/10/2017.
- Munarin, S., Tosi, M.C., *Tracce di città. Esplorazioni di un territorio abitato: l'area veneta*, Franco Angeli, 2001
- Pilan, C., Nonveiller, M., *Logistica e territorio: la rete dei nodi complessi di interscambio. Le nuove piattaforme logistiche distrettuali*, Fondo Sociale Europeo, Università Iuav di Venezia, 2012
- Regione del Veneto, *Piano di Sviluppo Rurale del Veneto*, 2013
- ReteGAS, Centro di Sperimentazione Ecomuseale di Venezia, Associazione Cristiani Lavoratori Italiani, *I gruppi d'acquisto solidale veneti nel 2011. Una fotografia d'insieme*, Acli Venezia, 2011
- Secchi, B., "A new urban question", in *Territorio*, 53, pp. 8-18, Franco Angeli, 2010.
- Tempesta, T., *Introduzione allo studio del paesaggio agrario del Veneto*, Tesaf, Padova, 1989, available on-line at the link <http://intra.tesaf.unipd.it/people/tempesta/Articoli%20per%20sito%20TT/paesaggio%20veneto.pdf>
- UNDP (2006). *Human Development Report 2006. United Nations Development Programme*, New York. <http://hdr.undp.org/hdr2006/> consultato il 15/11/2014.
- Veneto Agricoltura, *La vendita diretta dei prodotti agricoli*, Veneto Agricoltura, Padova 2005.
- Veneto Agricoltura, *Farmers market inl Veneto*, Veneto Agricoltura, Padova 2010.
- Veneto Agricoltura, *La vendita di latte crudo nel Veneto*, Veneto Agricoltura, Padova 2011.
- Veneto Agricoltura, *Prime valutazioni sull'andamento del settore agro-alimentare del Veneto*, Veneto Agricoltura, 2016.
- Viganò, P., Secchi, B., Fabian, L., *Water and asphalt. The project of isotropy*, Park Books, 2016
- Waste Watcher, *Waste note, un diario per amico*, 2017, available on-line at the link <http://www.sprecozero.it/2017/03/03/waste-notes-un-diario-per-amico/>, retrived on 15/09/2017

## Trends in urban food strategies

Rosalia Filippini<sup>1\*</sup>, Chiara Mazzocchi<sup>1</sup>, Stefano Corsi<sup>1</sup>

<sup>1</sup> DISAA, University of Milan

\*Corresponding author

---

### Introduction

International agencies have shown that the global population is constantly growing, it is more concentrated in urban settlements and it will be probably more vulnerable to food insecurity (FAO, 2014; FAO 2016). Food insecurity is an issue both in the Global South and in the Global North (Opitz et al., 2015). In **developing countries, the term “urbanization of poverty” (Speak, 2015) refers to the fact that low-income urban populations are equally at risk of poverty and food insecurity: many urban dwellers pay up to 30% more for their food than rural households (WFP, 2002).** In the Global North concerns are moved on the increasing food desert areas in metropolitan cities (Walker et al., 2010; Wrigley, 2002). In Europe for example, 10% of the population has declared to be unable to afford a quality meal, defined as one with meat, chicken, fish (or vegetarian equivalent) every second day (Eurostat, 2016). Nowadays, political concerns are moved on food and nutrition in urban areas (Morgan, 2009): food issues have become an urban fact (Pothukuchi and Kaufman, 1999). In facing urban food insecurity, Cities are not just simply providing food assistance programs: their aim is not simply to provide enough food to everyone, but to combine such provision with the limits of environmental, economic, and social sustainability (Sonnino, 2014). According to Lang and Barling, (2012) the sustainability issue has led Cities to include “the question of ‘how’ into public nutrition: how we eat, the modes of production and consumption. To the food is thus recognised a multifunctional character, which means to recognise that the food impacts several human dimensions: the public health, the local economy, the environment, the social inclusion (Morgan, 2015).

While several cities have developed food policies as comprehensive strategies, other Cities have now implemented only actions addressed to food security and sustainable food systems (Doernberg et al., 2016). To the best of our knowledge, a worldwide review of such food policies and actions is missing. Up to now, reviews have been focused on specific case studies (i.e. Reynolds, 2009; Wiskerke, 2009), or they have compared different cities within a similar background and food planning tradition (i.e. Sonnino, 2014). The overall purpose of this analysis is thus to perform a comparative analysis of the actions proposed in the urban food policies around the world. This work is based on both scientific and grey literature. Nowadays, the unique formal platform grouping cities sharing the same engagements in food security and sustainable food system is the Milan Urban Food Policy Pact (MUFPP)<sup>1</sup>. The MUFPP is an international protocol, engaging 133 cities of world in the development of sustainable food systems and food security. The MUFPP, has been subscribed by Mayors during a major event of Expo 2015. On the base of that, cities have been selected. To highlight the main trends of the urban food actions, the methodology is based on the community detection through network analysis, which enables the characterisations of cities’ groups on the base of the actions cities have in common.

### Methodology

#### 2.1 Sample and database

The list of the 133 cities which have signed the Milan Urban Food Policy Pact has been chosen as the sample for this analysis. A first selection has considered the cities that have effectively developed an urban food policy, or that have carried out specific actions in the topic of the urban food governance. In this phase among the 133 cities only 32 have been selected (Table 1).

---

<sup>1</sup> <http://www.milanurbanfoodpolicypact.org/>

*Table 1 Selected cities and their Urban Food Policy or Action*

<b>City</b>	<b>Urban Food Policy or Action/s</b>
Almere	Agromere
Amsterdam	Food & Amsterdam, Proeftuin Amsterdam
Baltimore	Baltimore Food Policy Initiative
Belo Horizonte	SMAAB projects
Berlin	Several projects of urban agriculture
Bilbao	Several actions of food policy
Birmingham	Birmingham Food Charter
Chicago	A Recipe for Healthy Places
Ghent	Gent en Garde
Johannesburg	Agriculture and Food Security priority, part of the Joburg 2040 Strategy
La Paz	Ley Municipal Autónoma No. 105 de Seguridad Alimentaria de La Paz
London	Good Food for London; London Food Strategy - Healthy and Sustainable Food for London
Lusaka	Women Groups Economical Empowerment
Madrid	Alimentando otro modelo de ciudad
Melbourne	Food city: City of Melbourne Food Policy
Mexico City	Aliméntate; Comedores Comunitarios
Milano	Food Policy Milano
Montreal	Nourrir Montreal
Nairobi	Nairobi Urban Food Bill: Nairobi fresh
New York	FoodWorks
Paris	Plan alimentation durable
Pittsburgh	Pittsburgh Food policy Council
Quito	AGRUPAR
Rotterdam	Food & The City
Riga	Getliņi EKO
San Francisco	San Francisco Healthy and Sustainable Food Policy
Sao Paulo	1° Plano Municipal de segurança alimentar e nutricional 2016-2020
Toronto	Toronto Food Strategy
Turin	Towards the Turin Food Policy. Best Practices and visions
Utrecht	Lekker Utrechts
Vancouver	What feeds us: Vancouver food strategy

Then, each action was analysed and categorized according to the “Framework for Action” provided by the MUFPP<sup>2</sup>. The text provides six main actions’ categories to which detailed recommended actions are associated (Table 2).

<sup>2</sup> <http://www.milanurbanfoodpolicycompact.org/text/>

Table 2 Topic and Recommended Actions (for a complete description of the Actions see <http://www.milanurbanfoodpolicypact.org/text/>)

Main topic	Recommended Actions	Code
Ensuring an enabling environment for effective action (governance)	Facilitate collaboration across city agencies and departments	G1
	Enhance stakeholder participation and Food Councils	G2
	Identify, map and evaluate local initiatives	G3
	Develop or revise urban food policies and plans	G4
	Develop or improve multisectoral information systems	G5
	Develop a disaster risk reduction strategy	G6
Sustainable diets and nutrition	Promote sustainable diets	N1
	Address non-communicable diseases associated with poor diets and obesity	N2
	Develop sustainable dietary guidelines	N3
	Adapt standards and regulations to make sustainable diets	N4
	Explore regulatory and voluntary instruments	N5
	Encourage joint action by health and food sectors	N6
	Commit to achieving universal access to safe drinking water and	N7
Social and economic equity	Use cash and food transfers	S1
	Reorient school feeding programmes	S2
	Promote decent employment for all	S3
	Encourage and support social and solidarity economy activities	S4
	Promote networks and support grassroots activities	S5
	Promote participatory education, training and research	S6
Food production	Promote and strengthen urban and peri-urban food production	P1
	Seek coherence between the city and nearby rural food production	P2
	Land use planning and management	P3
	Protect and enable secure access and tenure to land	P4
	Help provide services to food producers in and around cities	P5
	Support short food chains (farmers market)	P6
	Improve (waste) water management and reuse in agriculture	P7
Food supply and distribution	Assess the flows of food to and through (CO2)	D1
	Support improved food storage, processing, transport and distribution technologies and infrastructure (food flow)	D2
	Assess, review and/or strengthen food control systems	D3
	Review public procurement and trade policy	D4
	Provide policy and program support for different space of healthy and fair food	D5
	Improve and expand support for infrastructure	D6
	Acknowledge the informal sector's contribution	D7
Food waste	Convene food system actors to assess and monitor food loss and waste reduction	W1
	Raise awareness of food loss and waste	W2
	Research and collaboration on waste	W3
	Save food by facilitating recovery and redistribution for human consumption of safe and nutritious foods	W4

The result was a dichotomy matrix where it was indicated whether the cities had developed or not (1/0) a recommended action. In reviewing the food policies, two recommended actions were not associated with food policies actions: “Improve and expand support for infrastructure” (D6) and “Acknowledge the informal sector’s contribution” (D7).

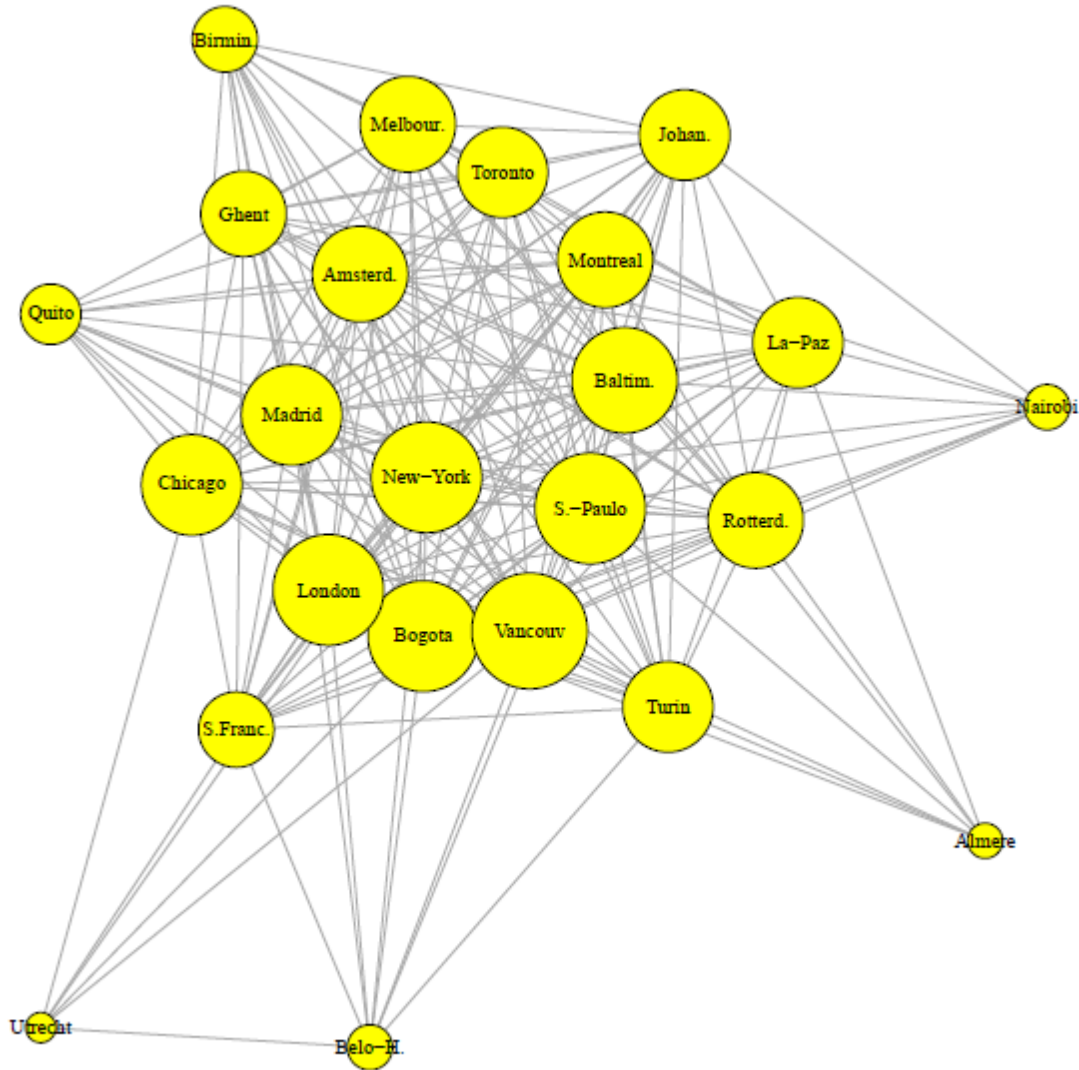
## **2.2 Network Analysis**

The method consists in the application of the network analysis based on textual analysis of the urban food policies’ documents, following the examples of Discursive Network Analysis (Leifeld, 2017; Muller, 2015). Through this method, it is possible to find out the “discourse coalitions” (Muller, 2015), which are groups of actors who are bound together according to shared ideas. In this study, the cities are associated on the base of the food policies’ actions they have in common. The more recommended action cities have in common, the stronger their relations will be. The network analysis and the community detection has been performed using the igraph package of the R software (Ognyanova, 2016).

### **2.2.1 Network development**

In the Discourse Network analysis, networks are built upon two types of nodes: a first type of nodes, which are usually the actors, and a second type of nodes which are usually the ideas they share (Leifeld, 2017; Muller, 2015). In the case of our analysis the first type of nodes are the cities and the second type of nodes are the recommended actions of Table 2. In literature this kind of network is called “two mode networks” (Borgatti and Everett, 1997). On the opposite, the “one mode networks” are characterized by only one type of node, as for example the actors that are related in social networks. In the case of two mode networks, the network analysis is performed by transforming the two modes network into one mode network, through the creation of the adjacency matrix. Such matrix defines the proximity between the first type nodes as the number of the second types nodes they have in common. On the base of this, the ties of the network are thus defined. In our case the ties between the cities – first type of nodes – is defined by the number of the recommended actions – second type of node – they have in common. In this process, to each network relation is assigned a weight  $w$ , which is a function of the amount of shared actions between the two actors-cities. In this analysis, during the network development a filter has been applied in the network on the weight greater than four ( $w > 4$ ), to delete the outliers and make the network more readable, In other words, all the ties between cities with a weight – number of policies in common between cities – lower than four have been excluded in the graph construction.





*Figure 1 Graph representation of the selected cities*

The final sample is thus composed by 24 cities (Figure 1). Most of the cities excluded, seem to have applied just one or few kind of recommended actions (i.e. Berlin, Paris, Riga), or they have implemented only a local census of the initiatives implemented in the city by private associations and groups (i.e. Milan), or they seem to have just started a process of consultation with private and public bodies (i.e. Bilbao). Figure 2 shows the final graph representation: the network is composed by 24 cities (nodes) and 204 connections. The network has a high score of density (0.73), which indicates that the nodes are highly connected in the network. In Figure 2 the different nodes size shows the degree  $d$  of each node, which is defined as the number of ties of each one node and it is a measure of centrality of the nodes in the network (Borgatti and Everett, 1997). Among the cities, Vancouver is the one more related with other cities, with a  $d = 23$ , followed by New York, San Paulo, London  $d = 22$ , while Utrecht is the less connected with a  $d = 6$ .

### **2.2.2 Community detection**

In the network analysis, a community is defined as a group of densely connected nodes with fewer connections across groups. Based on the sample, the Spinglass Community detection function (Reichardt and Bornholdt, 2006) simply calculates in several steps which pair of nodes should be in the same group. The method is appropriate for small samples (Yang et al., 2016) and it has provided a good value of modularity (0.52).

## 2. Results

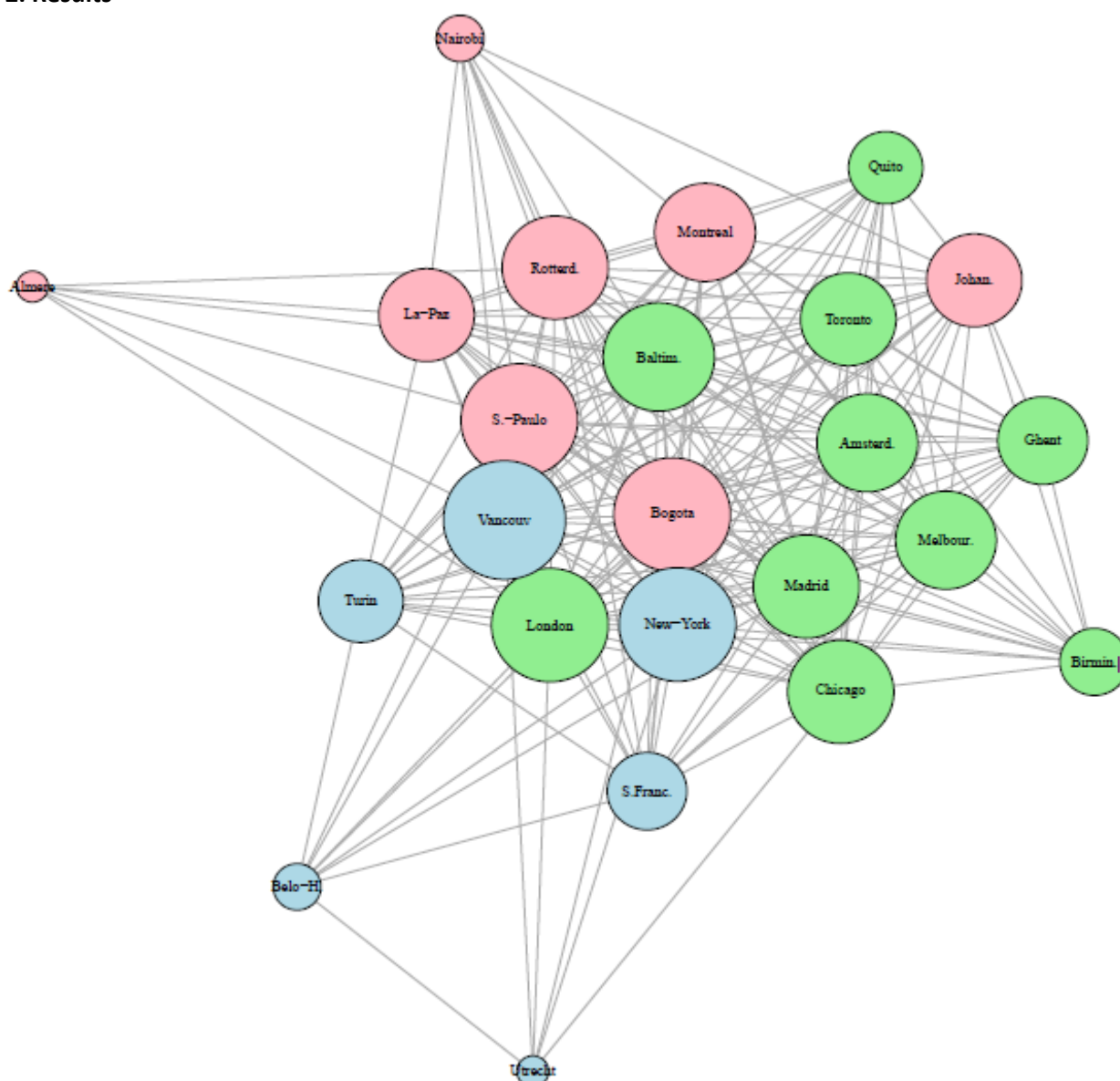


Figure 2 Cluster Analysis performed with the Spinglass community detection algorithm

The community detection algorithm has detected three cities' clusters (Figure 3; Table 3), highlighting three main trends.

Table 3 Groups of cities

<b>Group 1</b> <b><i>Agriculture for food security</i></b>	<b>Group 2</b> <b><i>Governance and food economy</i></b>	<b>Group 3</b> <b><i>Governance and healthy diets</i></b>
Almere	Belo-Horizonte	Amsterdam
Bogota	New-York	Baltimore
Johan.	San Francisco	Birmingham
La-Paz	Turin	Chicago
Montreal	Utrecht	Ghent
Nairobi	Vancouver	London
Rotterdam		Madrid
San Paulo		Melbourne
		Quito
		Toronto

### **Group 1 – Agriculture for food security**

In the first group, the Cities seem to address urban food security especially through actions which sustain food production. Notably all the cities are engaged in supporting urban and periurban agriculture (P1), which secures the supply of fresh and healthier food. In Nairobi, the City Council has set up a specific bill which legally allow urban agriculture (Nairobi City County, 2014). To prevent healthy risks, it has also envisaged several rules on food safety as hygienic standard, animal welfare and traceability (D3). To P1, Cities associate the protection and securing of access and tenure to land (P4). Through the “Inventario das zonas productivas” (Inventory of productive zones) La Paz aims to monitor what is produced, how and by who, as well as it verifies the potential food capacity of vacant land, distinguishing what is possible to produce in urban, periurban and rural lands (Ciudade de Nuestra Senora de La Paz, 2014).

To sustain the activity of farmers the Cities sustain the provision of services to food producers in and around cities (P5). In Johannesburg to empower urban farmers, seven “Agri-resource centres” have been organized, which aim is “to serve as community based support systems for agricultural activity at an individual/household and communal level” (City of Johannesburg Metropolitan Municipality, 2011: p.47); to do so, they organise training workshops, inter-sectoral collaboration forums, information and assistance about the access to land, cooperative registration, and they also provide productive inputs like seeds and water licenses. Beyond the sustain of the production, the Cities aim also to sustain the link of producers to markets and consumers (P6). In the “Plan Maestro de Abastecimiento y Seguridad Alimentaria” Bogotá has implemented the Agrored that are rural production networks among farmers and processors. Agrored seeks to organize supply, through associated rural producers in rural areas, to obtain improvements in (i) supply consolidation, (ii) adaptation and standardization, (iii) supply of inputs, and (iv) transportation of collection and delivery (Alcaldia de Bogotá, 2006). At the same time, the City has implemented the Nutrired, which is focused on improving the flow distribution (D2). The aim is to organise the supply of food among urban actors, integrating the local food processing, the food handling, the commercial management of all economic agents, making easier the connection between the production and the consumption areas. As the documents states, Nutrired is a way to integrate the demand activity of the different actors of a territory to be efficient internally and in its relationship with other networks (Camara Municipal de Bogotá, 2006). Finally, the attention on food quality is coherent with a general attention on promoting healthy and sustainable diets (N1), through specific campaign of education to children.

### **Group 2 – Governance social equity and economy**

The second cluster groups cities which seem to be more focused on governance actions, and in actions of social equity and economic development. Food policies aim to both sustain food access and address the social and economic sustainability of the food system. Cities are particularly engaged in facilitating the collaboration across city agencies and departments (G1). Before developing a unique food strategy, the governance approach of Belo Horizonte has been firstly focused in centralising all the programs connected to food in a unique municipal department. Created in 1993, the SMASAN “allowed for an integrated thinking of the food system. It no longer was “food for hungry students” in a department of education, or “food for needy people” in a department of social assistance, or “food for consumers” in a department of commerce, or “food from family farmers” in a department of agriculture” (Rocha, 2016: 33). In this way, the system can also contain the costs, for example through bulk food purchasing. The Cities enhance the stakeholder participation (G2), through Food Policy Councils. According to the Vancouver food strategy the “partnerships are an essential aspect of achieving the actions” of food policies (City of Vancouver, 2013: 49). In the group cities are engaged in several aspects of the food system, applying a multisectoral approach. On the production, the most common action is the support to short food supply chains (P6), such as CSA and other forms of farmers direct sale. The aim is both to facilitate the access of food to urban consumers, and to sustain the family farms’ economy; Turin has developed a label, the “Paniere dei prodotti tipici della Provincia di Torino” (Basket of typical products of the Province of Turin), which aim is to facilitate the sale of local farmers’ products in the urban shops (Città di Torino, 2016). the actions that review the public procurement and trade policy aim also to

sustain the local economic vibrancy (D4). San Francisco has established the “Food Procurement Ordinance”, by which “to ensure that a percentage of the City’s direct food purchases support regional agricultural producers, the Department of the Environment was asked to draft a local and sustainable food procurement ordinance” (San Francisco City, 2010: 18). On the distribution, the most common actions are the provision of policies and programmes supporting the different spaces of sale in the city (D5). New York has envisaged actions to support food manufacturers such as specific training workshops, the creation of an online resource centre, the development of new industrial space for food manufacture business. These actions beyond the improvement of the food access aim also to generate growth and employment in the food manufacturing sector (The New York City Council, 2013). On the waste management cities are interested in collaborating with the private sector along with research, educational and community-based organisations to prevent waste or safely recover food and packaging (W3). Several cities have proposed food assistance actions as food banks, community kitchens and others (S1). San Francisco has for example envisioned to maximize the food stamps enrolment through a public internet interface. The interest in the economic sustainability is discernible also by the fact that Cities sustain also economic activities that have a solidarity meaning (S4). For example, in Belo Horizonte the “Popular Restaurant” is a cafeteria-style restaurant open to all, serving over 20,000 nutritious meals per day at subsidized prices; with this action, the policy aims also to incentive the purchase of food directly from small-scale family (Rocha, 2016).

### **Group 3 – Governance and healthy diets**

The third group is represented by cities that are engaged in actions of governance with the main purpose to address issues on healthy and sustainable diets. The issue of food security is thus especially linked to promote healthy diets and provide access to fresh food in food desert areas. In fact, all the cities have developed actions of healthy diet promotion (N1), and some of them address non-communicable diseases associated with poor diets and obesity (N2), also supporting community gardens, and other social actions in schools (S5). The actions of healthy diet promotion (N1) are especially addressed to kids in schools through food education activities. With the aim of teaching children where food comes from and what are the healthy diets, in the Mayor Food Strategy, the City of London proposed to sustain the education system in increasing the amount of time spent food education in schools as cooking activities, which also means to support specific measures for individual schools and teachers (London Development Agency, 2006). To educate kids to the value of agriculture and fresh food Amsterdam and Chicago promote actions of community food gardens (S5) in schools. Chicago is the city more engaged on obesity and other diseases connected to poor diets (N3) (City of Chicago, 2013). In the policy, it has planned to improve the collection of data on obesity with qualitative interviews and obesity-related indicators, in accordance with researchers, university and other organizations; it has also envisioned to strengthen the collaboration between the public health service and the department of economic development in order to integrate healthy issues into local land planning projects. Beside the direct actions of public bodies, several actions aim to “engage grocery chain as partners” (N5), to share the responsibility of healthy choices with the actors providing food in the urban dwellers’ everyday life. For example, in Baltimore the “Get Fresh Kids Menu” action has led nine vendors to create healthy kid’s menu, which meet school nutrition requirements and that are proposed to kids in smaller portion size and affordable prices (Baltimore City, 2016).

### **Discussion and Conclusion**

The analysis has allowed to distinguish three main trends in the current food policies’ actions: the food production, the economic and social sustainability of food system, the food health. In general, less attention seems to be addressed to environmental sustainability and climate change (Reynolds, 2009). Especially the food waste management is tackled by few cities. If “the only food system to be secure is that which is sustainable, and the route to food security is by addressing sustainability” (Lang and Barling, 2012: 322), progress needs to be done on better addressing the sustainability of the whole food system.

The high level of density of the network show that Cities' strategies are highly interconnected. In fact, even if three groups have been detected, it is important to precise that for most of the city included in the communities the spectrum of actions is wider. This may be connected to the fact that Cities perceptions of the food insecurity and unsustainability of food system coming from data are similar, and so are the actions proposed to tackle it. Moreover, most of the Cities have relatively young food strategies and they have been developed on the base of the example of other Cities. Future studies should analyse the impact of the actions and the evolution of policies according to the context of the City.

The qualitative analysis was mainly based on the available documents in internet and it doesn't claim for exhaustiveness. Moreover, it has categorised the actions of the policies considering the description of the recommended actions provided in the framework of the MUFPP. Further studies could better analysis the intensity of the City's engagement in the actions proposed, comparing for example the number of farmers markets organised, or the amount of funding dedicated to support the different actions. In the analysis, we also have noticed that the terms used by the different cities to describe a phenomenon are different among the different documents and that such terms are not always used in the MUFPP. Moreover, the recommendation actions proposed by the MUFPP are very general and the document seems to be more a declaration of intents that a concrete strategy of actions. For this reason, we recommend deepening the meaning of the MUFPP's recommended actions, to make the worldwide platform a viable and concrete option for the policies' development of cities and an effective tool of coordination.

## References

- Alcaldia Bogotá (2008). Plan Maestro de Abastecimiento de Alimentos para Bogotá PMASAB. Available at: <http://www.alcaldiabogota.gov.co/sisjur/normas/Norma1.jsp?i=21063>
- Baltimore City (2014). Baltimore Food Policy Initiative. A Catalyst to Address Health, Economic and Environmental Disparities. Available at : <http://www.baltimoresustainability.org/projects/baltimore-food-policy-initiative/>
- Borgatti, S.P., and Everett, M.G. (1997). Network analysis of 2-mode data. *Soc. Netw.* 19, 243–269.
- City of Chicago (2013). A Recipe for Healthy Places. Available at: [https://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable\\_Development/Publications/Recipe\\_For\\_Healthy\\_Places/Recipe\\_for\\_Healthy\\_Places\\_Final.pdf](https://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Recipe_For_Healthy_Places/Recipe_for_Healthy_Places_Final.pdf)
- City of Johannesburg Metropolitan Municipality, (2011). Building our city. Building our future: End of Term Report 2011 – 2016. Available at: <https://joburg.org.za/images/stories/2016/june/pdf/End%20of%20Term%20Report.pdf>
- City of Vancouver (2013). What feeds us: Vancouver Food Strategy. Available at: <http://vancouver.ca/files/cov/vancouver-food-strategy-final.PDF>
- Ciudad de Nuestra Señora de La Paz (...). Ley Municipal Autonómica No. 105. Ley Municipal Autonoma de Seguridad Alimentaria available at: [http://base.socioeco.org/docs/ley\\_20municipal\\_20aut\\_c3\\_b3noma\\_20de\\_20seguridad\\_20alimentaria\\_20no.\\_201052014.pdf](http://base.socioeco.org/docs/ley_20municipal_20aut_c3_b3noma_20de_20seguridad_20alimentaria_20no._201052014.pdf)
- Freeman, L.C. (1978). Centrality in social networks conceptual clarification. *Soc. Netw.* 1, 215–239.
- Lang, T., and Barling, D. (2012). Food security and food sustainability: reformulating the debate: Food security and food sustainability: reformulating the debate. *Geogr. J.* 178, 313–326.
- Leifeld, P. (2017). Discourse Network Analysis: Policy Debates as Dynamic Networks. In *The Oxford Handbook of Political Networks*. Oxford University Press.
- London Development Agency (2006). Healthy and Sustainable Food for London. The Mayor's Food Strategy. Available at: [https://www.london.gov.uk/sites/default/files/the\\_mayors\\_food\\_strategy\\_2006.pdf](https://www.london.gov.uk/sites/default/files/the_mayors_food_strategy_2006.pdf)
- Morgan, K. (2009). Feeding the City: The Challenge of Urban Food Planning. *Int. Plan. Stud.* 14, 341–348.
- Morgan, K. (2015). Nourishing the city: The rise of the urban food question in the Global North. *Urban Stud.* 52, 1379–1394.
- Muller, A. (2015). Using Discourse Network Analysis to Measure Discourse Coalitions: Towards a Formal Analysis of Political Discourse. *World Polit. Sci.* 11.
- MUFPP – Milan Urban Food Policy Pact (2015). Winning Practices from the cities of the Milan Urban Food Policy Pact. Available at: <http://www.milanurbanfoodpolicypact.org/2016/10/14/milan-pact-awards-2016-winners/>

- Nairobi City County (2014). The Nairobi City County Urban Agriculture Promotion and Regulation Bill. Available at: <http://kenyalaw.org/kl/fileadmin/pdfdownloads/bills/2014/NairobiCityCountyUrbanAgricultureBill2014.pdf>
- Opitz, I., Berges, R., Piore, A., and Krikser, T. (2015). Contributing to food security in urban areas: differences between urban agriculture and peri-urban agriculture in the Global North. *Agric. Hum. Values* 32, 1–18.
- Pothukuchi, K., and Kaufman, J.L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. *Agric. Hum. Values* 16, 213–224.
- Reichardt, J., and Bornholdt, S. (2006). Statistical mechanics of community detection. *Phys. Rev. E* 74, 016110.
- Reynolds, B. (2009). Feeding a World City: The London Food Strategy. *Int. Plan. Stud.* 14, 417–424.
- Rocha, C. (2016). Belo Horizonte: the Opportunities and Challenges of Urban Food Security Policy. In Mark Deakin, M., Diamantini D., and Borrelli N. (eds.) *The Governance of City Food Systems: Case Studies From Around the World*. Fondazione Giangiacomo Feltrinelli, ISBN 978-88-6835-241-7.
- San Francisco Department of Public Health (2010). Executive Directive on Healthy and Sustainable Food 09-03. Summary Report. Available at: [http://sfgov.org/sffood//sites/default/files/Documents/sffood/FPC\\_Summary\\_Report\\_December\\_2010\\_final1.pdf](http://sfgov.org/sffood//sites/default/files/Documents/sffood/FPC_Summary_Report_December_2010_final1.pdf)
- Sonnino, R. (2014). The new geography of food security: exploring the potential of urban food strategies: The new geography of food security. *Geogr. J.* n/a-n/a.
- The New York City Council (2013). FoodWorks A Vision to Improve NYC's Food System. Available at: [http://council.nyc.gov/html/action/acpdfs/foodworks\\_report\\_update\\_2013.pdf](http://council.nyc.gov/html/action/acpdfs/foodworks_report_update_2013.pdf)
- Walker, R.E., Keane, C.R., and Burke, J.G. (2010). Disparities and access to healthy food in the United States: A review of food deserts literature. *Health Place* 16, 876–884.
- Wiskerke, J.S.C. (2009). On Places Lost and Places Regained: Reflections on the Alternative Food Geography and Sustainable Regional Development. *Int. Plan. Stud.* 14, 369–387.
- Wrigley, N. (2002). "Food deserts" in British cities: policy context and research priorities. *Urban Stud.* 39, 2029–2040.
- Yang, Z., Algesheimer, R., and Tessone, C.J. (2016). A Comparative Analysis of Community Detection Algorithms on Artificial Networks. *Sci. Rep.* 6.
-

# Post-productive Ruralscape: The Role of the Food Market, the Ter Brugent Case, Catalonia

Romà Garrido y Puig<sup>1</sup>, Marta Carrasco Bonet<sup>1</sup>, Nadia Fava<sup>1</sup>

<sup>1</sup>Universitat de Girona

Email: Gastrocert.udg@gmail.com

---

**Keywords:** rural development, resourceful urbanism, food urbanism, food market, local food supply chain.

---

## Abstract

This paper opens a critical debate on the renewed popularity of public food markets and “food urbanism”, which has generated growing attention among policymakers and planners, and urban and social science scholars. While “food urbanism” has been improved in some European and North American cities, in Spanish rural areas it is still in an experimental stage, despite more than twenty years of experience in gastronomy and food tourism as a response to the post-productive rural landscape and even as a form of mass tourism. However, these areas seem to alternate between global and local economies, swinging between the effect of global tourism activity and local food commodity.

While the role of public food market halls has been analyzed from several perspectives, this paper focuses on their role as public services, as places where the urban-rural relationship can be articulated, and as part of the food supply chain that could improve strategies for a more resourceful urbanism by instigating “local food production, selling and eating”. Based on data taken from interviews and questionnaires, this study looks at seven food markets in the rural area of Ter Brugent in Catalonia. Here we discuss the results of the ongoing study (being conducted within the structure of the LAG Adrinoc) into local food production and commercialization in the food market being a key perspective for future development. We consider not only the economic aspect, but also but also proximity and social value such as social recognition in this rural area, which is now suffering from population decline and a depletion of productive land.

## 1. Introduction

The relationship between food/gastronomy and urban transformation (Parham 2015, Baics 2016, Fava, 2016) in the 21st century has been widely examined from a social, economic, urbanistic, tourist, anthropologic, and cultural heritage perspective. However, less literature is available on the role that food and its distribution plays (in the context of the economically depressed rural area (Nordin, 1983)) as an element able to socially and economically renovate and regenerate rural villages in developed Mediterranean countries. New words have been conceived to describe the connection between food and the context of its social and physical territory, for example, “foodscape” or “foodshed”, but the narrative surrounding these concepts is mostly related to the city and reinforces the idea of sustainable and healthy food in keeping with the mainstream food trends and/or related to gastro city gentrification issues or gastro-branding or gastro-tourism<sup>1</sup>. Within the framework of the post-productive rural landscape, where agricultural production gradually shifted towards demand for amenities, ecosystem services and the preservation of cultural landscapes (Almested, 2014), the package related to the local agri-food does not always provide the answer to the fundamental problems caused by population demographics, a poor economy, high presence of the unemployed people with the following consequence in the social field.

In organic societies, the sustainability of the society itself was based on the balance between the exploitation of the land and the natural ecosystems (Tello, 2013). With the conversion to industrial societies and the resulting increase in urbanization processes, this balance disappeared, producing some effects on the cultural landscape such as afforestation of rural areas, the transformation and loss of the rural economy, the change to specialization in agricultural extension, a decrease in biodiversity levels as a result of agricultural land loss, a loss of the natural-based systems of balance for rural societies.

As a holistic or central nucleus that can provide answers to multiple dimensions from agriculture to climate mitigation, from social contributions to European heritage, 'food' is extending its presence to European and national policy making.

In 2012 the European Union's European Economic and Social Committee contemplated that "production, processing and marketing of regional foods and other regional products should be geared towards specific local requirements and characteristics"<sup>2</sup> thus acknowledging the necessity to reformulate the rural question i.e. not only dealing with it in terms of production or quantity. The question emerging asks what rural development is. The EU policy framework for rural development outlines a focus on three key areas: the agri-food economy, the environment, and the broader rural economy and population<sup>3</sup>. An area which could be implemented with bottom up policies through a LEADER project<sup>4</sup> run by a Local Action Group (LAG) ("Liaison Entre Actions de Développement de l'Économie Rurale" or links between the rural economy and development actions in English) would allow local players to develop a specific area by using its endogenous development potential. In other words, projects that not only have to implement the relationship between thinkers and doers, but also the connection between agri-food producers, citizen food retailers and policy makers.

Food production and commercialization are among the main aims of many Leader projects: Many of these projects are managing to reduce the material inequality between urban and rural areas, are revalorizing local knowledge and are promoting a sense of confidence, self-worth and self- and community affirmation. (Danny MacKinnon and Kate Driscoll Derickson, 2012). Our research brings to the debate the experience of working with a Leader project and attempting to define to what extent the food issue could support the development of the depressed area using endogenous factors in which the growth of new branches of tourism could be one, albeit not the most relevant, of the results.

Our article focus on food distribution via public food markets. There are several reasons which make this case study ideal for this research field.

The public food market system in Catalonia, one of the most popular tourist regions in Spain, comprises more than 40 markets in Barcelona along with more than 30 others in the Catalan villages (Casassas i Simó, 1978), as well an extensive system of weekly food markets in minor localities. Food markets have been the driving force behind the configuration of European cities and their society since Medieval times, and they have contributed to the configuration of their identity and to cultural gastronomic heritage. Moreover, the markets feeding the city have embodied the connection between the territory and the urban areas, but now they are in danger of losing this role because of globalized food commerce, the manufactured food industry and the negative impact external tourism has had.

Research concerning weekly markets highlights that itinerant trading, including the weekly food market, is now a kind of residual trading system, and specialized fairs connected to a specific event or festival are increasing in number (Nordin, 2016). Our research indicates to what extent the weekly markets are a potential focus for future trading and innovating the city model for small rural towns.

---

<sup>1</sup> If the figures portray European countries today i.e. with half the population living in the urban context where most research is concentrated, we focus on the other 50% which has enormous potential to be tested and that, until now, conserves an alternative, in practice, to the economy of scale.

<sup>2</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52012IE0483>

<sup>3</sup> [http://enrd.ec.europa.eu/enrd-static/policy-in-action/rural-development-policy-overview/eu-strategic-approach/en/eu-strategic-approach\\_en.html](http://enrd.ec.europa.eu/enrd-static/policy-in-action/rural-development-policy-overview/eu-strategic-approach/en/eu-strategic-approach_en.html)

<sup>4</sup> In Catalonia, the LAG 'Adrinoc' runs the GASTUM project and its many initiatives.



Research concerning weekly markets highlights that itinerant trading, including the weekly food market, is now a kind of residual trading system, and specialized fairs connected to a specific event or festival are increasing in number (Nordin, 2016). Our research indicates to what extent the weekly markets are a potential focus for future trading and innovating the city model for small rural towns.

In the field of rural development, localized and specialized agriculture and small-scale entrepreneurship are increasingly promoted as a means by which the rural economy, its culture and ecosystems can be sustained (Morgan et al. 2010). Here, we contribute insight into a different dimension: the food market. The main questions considered are: a) how food markets contribute to a more resilient and balanced rural-urban development by promoting the transfer of local culture and the knowledge of the traditional productive systems and structures, b) how food markets can be employed to create products for a diverse array of consumers - including tourists as well as local residents and c) how the agri-food sectors mobilize and initiate the (re)definition and (re)valorization of heritage to build territorial competitiveness.

## **2. The territory of the weekly food markets**

Food markets now are an emblem of distinction, not only for the type of product they offer, but also as historical heritage. Food markets provide a continuous unbroken connection with the Middle Ages, and are a fundamental link with the territory through its gastronomy and culture linked to food production. (Parham, 2007)

The Catalan case, which is the focus of this article, and specifically the province of Girona, is characterized by being a Mediterranean area with a large spectrum of different landscapes, cultures and gastronomy. The Pyrenees mountain chain, wooded hills, the sea coast and the large, fertile, Empordà valley, are the diverse landscapes and cultures rooted in this region, with a corresponding different culinary culture and gastronomy (Harrington, 2005).

Nevertheless, historically territorial division was not by landscape units but rather by retailing criteria, thus emphasizing the importance of the market place<sup>5</sup> at the beginning of the 20th century<sup>6</sup>. The process of dividing the region begun with a survey sent to all municipalities in Catalonia asking three core questions; two of which focused on the relationship between the citizens and the place where they usually bought their food.

The results of the survey led to the first map of Catalonia being drawn up in which public food markets (open air or covered) were the pillars of the region and the main pillar of every village. The cultural and social capital of the relationship between rural and urban territory, the territory administration, food supply and local identity was, in this way, fixed in the territorial idea of *comarca*<sup>7</sup>. Therefore, approved in 1931 and still current today, commerce - not production- was the foremost concern when it came to dividing Catalonia into its regions.

Moreover, since the end of the 1950s, the region has had a strong presence of international and national tourism on the Costa Brava which has had an impact not only socially, but also on local culture and on those landscapes where agriculture decreased as a result of increased tourism. That said, in the last decade a new tendency has emerged. Rural and agri-gastronomic tourism is being encouraged in areas not affected by mass tourism or by enterprises looking to innovate the market.

---

<sup>5</sup> Although in the rest of Europe markets had begun their decline in the 1930s, the Catalan markets were still functioning.

<sup>6</sup> Historically The *comarcal* division of Catalonia outlined by Pau Vila. The *comarcal* division is a question that appears in Catalonia in the 16th century, but it was not enforced until 1986. Jesús Burgueño, *Historia de la divisió Comarcal*, (Lleida: Rafael Dalmau, 2003)

<sup>7</sup> The general principles were as follows: to divide Catalonia into the smallest number of districts possible in order not to multiply the fees; the people from each district could go in a day from in their respective capitals; to try to provide a demographic balance among *comarques*, in terms of the number of inhabitants.

While food markets may be a new tourist product, they also answer the new demand for local or zero-mile products and to the demand initiated by the food sovereignty movement, in this case linked to the actual Catalan political movement towards independence.

Traders' markets are a form of traditional trade that is tied to the territory which it supplies. Nevertheless, the retailers' circuits come from a commercial and profit-making logic, although there are other relevant factors that should be taken into account: a) their personal strategies and their personal linkages with the places b) their social role of provisioning a rural society where shop trade is limited or nearly absent.

In Catalonia, this type of trade is more typical of low-density territories such as rural or mountain landscapes where the village itself has very few shops or even none at all. In these circumstances the food markets are not an alternative place to shop or a place to buy special products, but rather the only means for a sector of the population that does not have sufficient mobility to go to the main shopping center to access daily convenience products, i.e. the youngest and the oldest members of the population.

The mobility weekly markets deserve to be studied from the dynamics generated by the urban and territorial context, in other words, studying how the vendor chooses which villages to "stop" at, what their strategies or motivations are in doing so and to what extent they respond to commercial logic or to a logic of proximity. The logic from which the stallholders decide their weekly circuit depends on each individual, their professional career, commercial opportunities, personal conviction or even their own connection to the territory (Nordin, 2016)

### **3. Case study: Ter-Brugent weekly markets**

These weekly local markets have a patrimonial value that is normally associated to the presence of local producers, even if in practice, producers and vendors coexist. The relationship between the vendor and producers is an indicator of whether the weekly market is rooted in territory or is just another form of global food supply.

Specifically, this article focuses on the markets of Sant Feliu de Pallerols, Les Planes d'Hostoles, Amer, Celler de Ter, Anglès and Bonmatí in the Ter-Brugent area. The study takes into main players, consumers, dealers, local producers and other related actors, such as local administration or the Group of Local Action<sup>8</sup>.

This region suffers from socioeconomic deficiencies which include an increasingly aging population<sup>9</sup> and high unemployment rates. The inability to retain the young and the few economic opportunities available are a challenge for the municipalities and competent administrations as they try to foster employment opportunities and economic vitality.

The research analyses the contribution the weekly markets in the Ter-Brugent area make, their capacity to generate economy and to improve social and economic networks with the local community and as a public service of proximity. The main objective is to identify the social, cultural and economic role of the weekly markets play, their impact on a local and territorial level and the strategies implemented to strengthen the local economy.

Zero-mile food - and its assumed qualities of being healthy, fresh and nutritious food - is every so often not attainable for the low-income sector of the population. While access to local food is a key element in achieving a balanced diet for the local population, more importantly it supports the local economy and a stable demography in a more "convivial" environment.

According to data from the Strategic Plan only 9.7% of the Ter-Brugent is devoted to food production and there is a tendency to abandon agricultural activities in the steepest areas close the mountains. Half of the agricultural land is cropped and the other half is destined for pasture. This means that only 4-5% of the Ter-Brugent territory is dedicated to agri-food production destined directly for human consumption.

---

<sup>8</sup> The LAG are organizations created to manage the Leader grants. Its objective is to promote a structural policy aimed at the rural world, paying special attention to the agricultural and forestry sectors. They promote in their territories, either by public or private developers, and who are in consonance with the objectives and strategies

<sup>9</sup> The sum of population with less than 14 years or more than 65 corresponds to the 40% of the total. (IDESCAT, 2015)

Three main factors influence the local population's consumption habits and these have a direct impact on the retail sales at the merchants' markets:

- Legislation that favors the establishment of large agri-food sales points, such as supermarkets and hypermarkets.
- Rejection or progressive abandonment of traditional trading practices.
- A general context of reduced populations.

The sum of these three factors directly affects the development of micro-economies that would **implicate the stallholders in the merchant markets. These factors must be added to the** powerlessness of the municipalities to create effective policies to revive this type of trade, to establish specific plans for food commerce and to promote actions designed to avoid the progressive abandonment of these weekly markets.

#### **4. Data collection**

While our analysis focuses on the weekly itinerant food market, its main focus is on the stallholders who sell food products, because they represent the most stable vendors among the floating vendors also found in the weekly markets. Markets selling manufactured products such as clothing and other items are not held as frequently such as the food retailing markets are. The

analysis attempts to debate what kind of movement generates the market itself, not only from the point of view of the vendors or customers, but also from an urban point of view. We also examine the population and the commercial activities that benefit from the weekly market.

The weekly circuit of every retailer defines another aspect that encompasses territorial logic: from the place of residence of the stallholders themselves or where they have the land for agri-food production, to the system of mobility and connections.

#### **5. Method**

We will use quantitative and qualitative methodology to diagnose the local and territorial levels. GIS technology will be used to measure the proximity and/or density of the production and distribution centers to characterize the retail system for the agri-food products. The data that will be extracted to carry out the study will come from the interviews with the local stallholder, producers and local shopkeepers.

Consumer interviews will also establish patterns of behavior and consumption habits that will be included as data for diagnosis, supported by GIS technology, to understand the routes the users of weekly markets take, to measure - on local and territorial levels - the "territory" or the range the market in question has.

#### **6. Findings**

The results we will obtain will focus on two main dimensions:

1. A territorial approach: the analysis of local experiences would individuate the best practice that have been developed on different scales (Vall d'en Bas, Olot, and the Wetlands of the Empordà) by considering complementary regional structures and evaluating the cultural, social, economic and natural environments.

2. Productive heritage: to design a route of itinerant food markets to improve support for sustainable territories by creating a holistic system around food, in accordance with the local population, producers and public administrations and, at the same time, with the promoters of the research. The process includes the participation of citizens who, together with the policy makers, can design specific actions that include valuing cultural and gastronomic heritage, agricultural work and techniques, food production and all the specific knowledge required for any food related production.

The strategies seek to upgrade the peri-urban spaces by introducing new activities and promoting existing ones, transforming and improving those areas that are neither agricultural nor urban to increase their visibility, accessibility and the use made of them by the citizens, all the while taking special care of the urban and agriculture landscape and social needs. Likewise, green spaces, with walking or cycling routes for visiting producers, and the recovery of natural resources guarantee the use of these spaces,

not only from the biological and biodynamic point of view, but also by the commercialization of 0 mile food. All the process would point to a circular economy in which the social dimension, pedagogical perspective and public/private participation would be considered, thus addressing the (re)qualification of marginal spaces and their exploitation with a social and educational character and bringing innovation to the rural area.

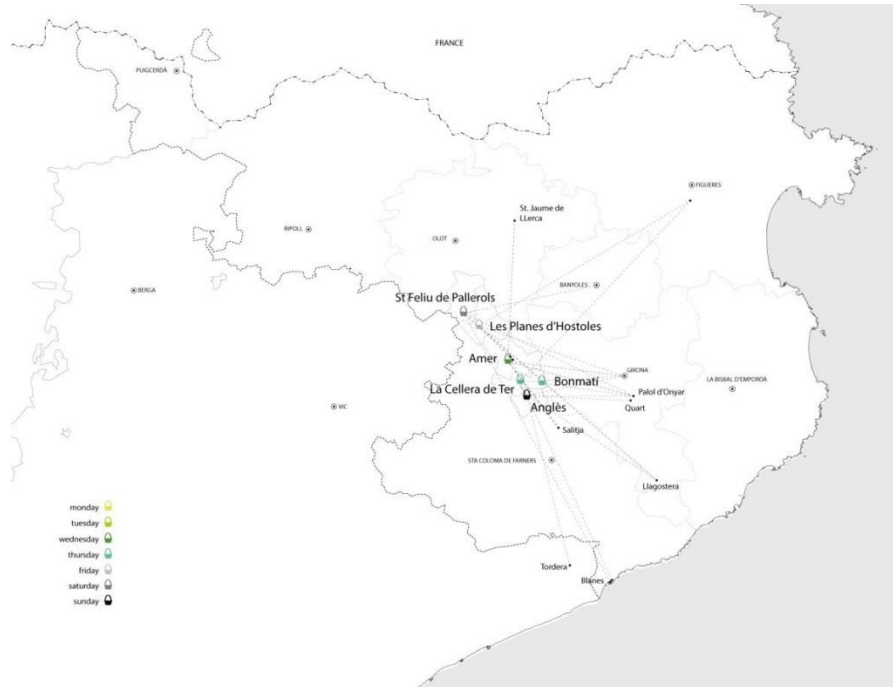


Figure 1. Vendor domicile

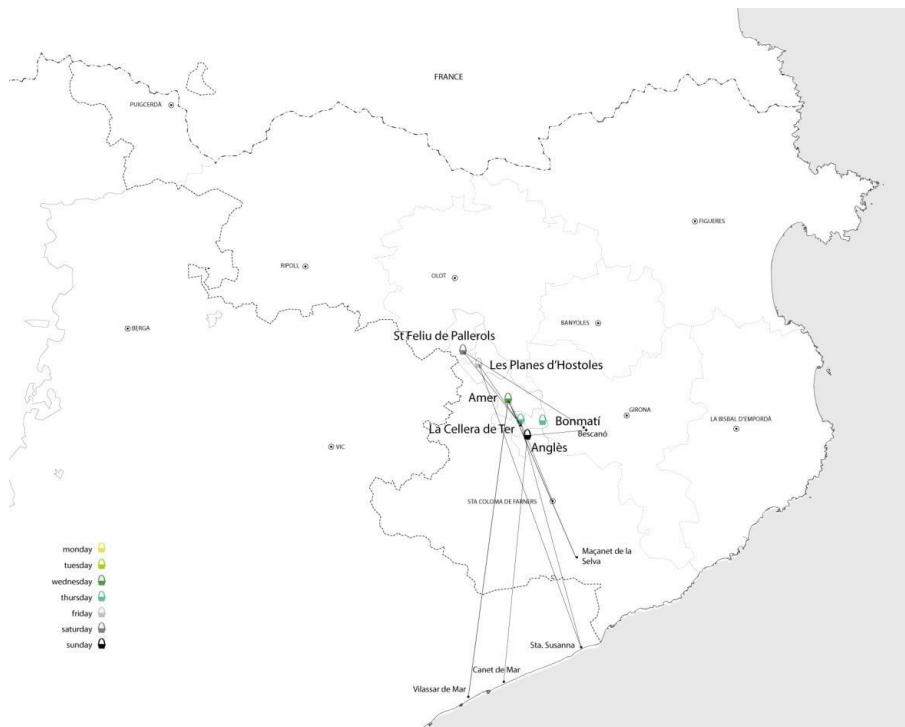


Figure 2: Stallholder and producers domicile.

## 7. Conclusion

This article contributes on two fronts. Theoretically, the article provides a debate on the role the food vending environment plays in rural development, with the final aim of stopping population decline in rural areas. Enlightened policies and strategies have been implemented to promote a sustainable food economy via collaboration between municipalities, LAG and academics. The case study presents a geographic analysis of the retailing structures, including the weekly markets, of a specific area. Within a territorial and urban approach, the analyses of these markets pay special attention to their social structure, as food has often played a major part in the social sphere by supplying the sector of the population without income and/or who have reduced mobility.

The versatile perspective of the food markets is an advantage for the resourcefulness of the food retailing system. However, the current situation of the seven weekly markets is still weak because in the last decade the number of stalls has decreased and the vendors have begun to seize economic opportunities in other areas closer to the coast where greater sales and higher incomes can be expected. Therefore, this would suggest that citizens of the Ter Briugent Area have shifted their consumption habits to the domain of the supermarket.

Nevertheless, the existing social relationships between vendors and consumers could be one of the key elements to maintaining this food retail structure, based on circles of trust (Ray, 2001) and strategies towards a zero-mile food supply within ecological thinking perspectives.

The strength of the role of food market has is not only its resourcefulness as a shared public facility, but also its ability to promote a social relationship among citizens, which is the base to ensure gastronomy heritage values prevail.

## References

- Almstedt Åsa, Brouder Patrick, Karlsson Svante, Lundmark Linda, (2014), Beyond Post- Productivism: From Rural Policy Discourse to Rural Diversity, *Europ. Countrys.*, 4, 297-306
- Baics, Gergely, (2016), The geography of urban food retail: locational principles of public market provisioning in New York City, 1790–1860, *Urban History*, 43 (3), 435-453
- Bessière, Jacinthe (1998), Local development and heritage: traditional food and cuisine as tourist attractions in rural areas, *Sociologia Ruralis*, 38, (1), 21-34
- Casassas i Simó (1978), Lluís. Fires i mercats a Catalunya. Barcelona: Ediciones 62.
- Fava, Nadia; Guardia, Manuel; Oyón, José Luis (2016), Food retailing and the public market system: the Barcelona case, 1876-1936." *Journal of Urban History* 43, 454-475.
- Harrington Robert J. (2005) Defining Gastronomic Identity, *Journal of Culinary Science & Technology*, 4:2-3, 129-152
- Horlings Lummina G., Marsden Terry K. (2014), Exploring the 'New Rural Paradigm' in Europe: Eco-economic strategies as a counterforce to the global competitiveness agenda, *European Urban and Regional Studies*, Vol 21(1) 4 –20
- MacKinnon Danny; Driscoll Derickson Kate (2012), From resilience to resourcefulness: Acritique of resilience policy and activism, *Progress in Human Geography*, 37 (2) 253-270.
- Magnaghi, Alberto (2000). Il progetto locale, verso la coscienza del luogo. Torino: Bollati Boringhieri.
- Morgan, Kevin, Sonino Roberta, (2010), The urban foodscape: World cities and the new food equation, *Cambridge Journal of Regions, Economy and Society* 2010, 3, 209–224
- Nordin, Christina (1983), Marchés, commerçants, clientèle: le commerce non sédentaire de la région parisienne, Université de Göteborg, 1983
- Nordin, Christina, Troin, Jean-François et Milhan Chaze, (2016), Market Trade and Itinerant Trading, *bsgl*, 66, 2016, 59-63: p.60
- Parham Susan (2015), Food and urbanism: the convivial city and a sustainable future, *Orbis Yale University Library*
- Ray, Christopher (2001). Culture Economies: A perspective on local rural development in Europe. Newcastle-upon-Tyne: Centre for Rural Economy, Dept. of Agricultural Economics and Food Marketing, University of Newcastle-upon-Tyne

# **"Urban Food Strategies: the role of Food Champions and policy entrepreneurship in Cork and Bergamo"**

**Gloria Giambartolomei,<sup>1</sup> Francesca Forno,<sup>2</sup> Colin Sage,<sup>3</sup>**

<sup>1</sup>Centre for Agroecology, Water and Resilience (CAWR), Coventry University, UK. <sup>2</sup>University of Trento, IT. <sup>3</sup>University College Cork, IR.

## **1. Introduction**

Scholars have started to document how pioneering urban governments around the world are addressing food security challenges (e.g. Pritchard et al. 2016) through the adoption of so-called urban food strategies (UFS). Within this emerging field the role of actors as “strategic brokers to address food system issues” (Mendes 2007: 103) has been identified. Their actions in the context of UFS creation range from broad-based outreach activities, including conferences and network building, to facilitation of social learning processes. These initiatives generally comprise “networks of activists and organisations, generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved” (Seyfang and Smith 2007: 585). Yet as Moragues-Faus & Morgan (2015: 1561) highlight, such networks are often created by “food champions” or “policy entrepreneurs”, key enabling agents of a new form of policy making, working to establish a new connectivity between food planning and policy making.

Collective agency of food champions as well as the levels of engagement and strategies implemented by various actor groups and stakeholders have scarcely been investigated so far. This paper aims to fill this gap, providing a particular perspective on some little-known experiences of urban practices. Moreover, this research aims to inspire new agents of change, i.e. individuals or group of individuals, from inside and outside institutions, eager to become food champions and willing to contribute toward urban food system change.

This paper is organised as follows: first, we briefly review the theoretical framework based on policy entrepreneurship and (collective) leadership literature. Then, following a methodological paragraph, we describe the strategy utilized to analyse two cases of small-medium sized cities, which have recently started to develop their own UFS: Bergamo (Italy) and Cork (Republic of Ireland). Finally, after summarizing the main characteristics of these two cases we draw some preliminary conclusions from the comparison.

## **2. Policy Entrepreneurship and Collaborative Leadership**

Policy entrepreneurs (PE) are defined as “those who make things happen” (Crona et al. 2011), and different terms have been adopted to refer to them: policy champions, brokers, change agents, social innovators or institutional entrepreneurs (Ibid.). PE have been conceived as power brokers, manipulators of problematic preferences and unclear technology, and coalition enablers, willing to change current ways of doing things in their area of interest (Mintrom and Norman 2009, Zahariadis 2014). In order to introduce innovations, PE “invest their resources—time, energy, reputation, and sometimes money—in the hope of a future return” (Kingdon 2003: 179). Generally, they are on the alert for opportunities, seeing chances to link policy proposals - solutions - to problems and participants, in the attempt to exploit political momentum, accepting related risks and failures (Brouwer 2015, Brouwer and Biermann 2011).

PE can come from both outside or inside governments, as often they have been identified among academics, NGO's representatives or civil society (Meijerink and Huitema 2010). Their background influences their access to various type of important resources, to promote their policy solutions.

Some authors have highlighted the presence of relevant “conceptual overlaps” (Meijerink and Stiller 2013: 248), across theories focused on leadership and policy entrepreneurship. Specifically, the overlaps concern the fact that, in socio-ecological systems, leaders provide key functions such as building trust, making sense, managing conflict, linking actors, initiating partnerships among them, generating knowledge as well as recognising and seizing windows of opportunity (Folke et al. 2005). Moreover, leaders communicate and engage with key individuals in different sectors, combine different networks, experiences and social memories, as well as generating a variety of ideas, viewpoints and solutions (Olsson et al. 2006, Meijerink and Stiller 2013).

However, authors such as Westley et al.(2013), suggest that we should question the appropriateness of the use of word “leaders”, when it comes to “the activity of change agents in such a complex domain of networks, sectors and scales” (Ibid.). They conclude that the stewardship in complex and uncertain systems is made of many actor groups, who act collectively, with a variety of skills and roles: from sense makers, networkers, facilitators, innovators, policy entrepreneurs, interpreters to visionaries and inspirers (Ibid.).

This perspective has been further developed by scholarship dealing with collaborative, distributed, participative, shared and collective perspectives on leadership (multiple references in full paper). These authors favour a group-centred perspective, shifting the focus of the analysis to leadership practices, rather than features, behaviours or personal traits, in the attempt to understand “what leaders do to engage people, rather than who leaders are” (Ardoin et al. 2014: 362). Collaborative leadership scholars emphasize the fact that collaborative leaders build capacity via broadening participation, and aim at focusing on dialogue, building relationships and stressing the importance of diversity of viewpoints (Imperial et al. 2016). This attitude brings them to pursue the crafting of a collective vision around problems and solutions (Ansell and Gash 2012).

This raises questions around the degree to which we can speak of these stakeholders as “food citizens”, which refers to the power of citizens to create a new terrain for social agency and political action in relation to the food system(De Tavernier 2012, Sage 2014). Such a term reflects advocacy for individual and community Right to Food (De Shutter 2011). Building a genuine food democracy in which the active participation of citizens who want to ensure environmental sustainability and economic viability of healthy, fair and culturally appropriated food procurement is, after all, the key strategic goal of food policy entrepreneurs.

These characteristics and attitudes attributed to leaders seem to have much in common with the strategies implemented by policy entrepreneurs. The table below (Tab. 1) summarise the strategies implemented by policy entrepreneurs as recognised in the dedicated literature.

*Table 1: Strategies implemented by policy entrepreneurs*

<b>Defining Problems – Issue Linking</b>	refers to the ability of construct shared and common visions and framings around issues (Crona et al., 2011 and Westley et al., 2013). This would entail encompassing many different interests, perspectives and “ways of knowing” about the same issue (Meijerink & Huitema, 2010).
<b>Leading by Example</b>	refers to the capacity of the PE to overcome the widespread perception of risk associated with the introduction of a (policy) change (Mintrom & Norman, 2009, p. 653).
<b>Building Trust, Motivation and Legitimacy</b>	represents a key activity. PE can crucially contribute to activate and nurture social capital, which is a great incubator of trust within communities and social groups (Putnam, 1993), and fundamental driver to enable collective action.
<b>Linking actors and Building networks</b>	refers to the fact that PE usually highly value the importance of being team players, since their strength as change makers lies on their capacity to work with others, in coalitions formed by different knowledge and skills (Mintrom & Vergari, 1996). PE are considered being “at the edge of social groups” (Crona et al., 2011, p. 57), in such way that their boundary-spanning contacts allow them to obtain a brokering position to harness the information and the trends of various groups, acting as hub between various groups.
<b>Generating and Disseminating Knowledge</b>	emphasises the fact that PE need to engage in activities of capacity building and awareness raising, to enhance the social understanding of environmental and sustainability issues. This represents a pivotal step to stimulate the concerns and the engagement of the community and, consequently, trigger support towards PE’s solutions.
<b>Facilitating Social Innovations</b>	concerns the fact that “in communities across the world, individuals daily come up with new ideas, large and small, for improving their lot and the lot of those around them, in response to locally perceived problems or social needs”(Westley & Antadze, 2010). PE should be able to intercept with these new ideas and try to introduce and/or get them recognised from formal or institutional leaders (Scholten, Keskitalo, & Meijerink, 2015).
<b>Recognising or Creating Windows of Opportunity</b>	Leaders often are interested in looking for new ideas to promote, just as the PE want to get their ideas approved. It is paramount that PE recognize when it is possible to change the ideas of other actors, and “frame them in a certain way so that their preferred policies become the logical solution” (Ibid., p.729). The identification of windows is not however an easy task, and the meaning attributed by the PE can be always contested.

### 3. Methodology

The study used a mixed methods approach comprising in-depth semi-structured interviews (n=21 in both cities) together with participant observation across a range of locations and events over 20 days of fieldwork. Interviewees were selected using a snowballing sample that started with the two academics in

each location (and the co-authors of this paper) and stretched across a range of stakeholders. The findings and conclusions of this paper consequently reflect the deep insights and highly engaged involvement of two authors coupled with the more objective analysis offered by the lead author. We believe that this approach offers strengths as well as potential methodological hazards.

#### **4. Bergamo: Food and alternative economic networks to reboot a local economy in crisis**

The city of Bergamo is located in a region characterized by an advanced economy, high-quality of life, and unemployment rates relatively low, with a still relevant traditional manufacturing sector, composed of typical industrial districts of SMEs. Despite being lower than the National average, the unemployment rate has notably increased during the recent economic crisis. Thanks to its rich and diverse landscapes, the agro-food sector is enhanced by the presence of several local typical products and specialities. Contrary to the industrial agro-food sector mostly developed in the southern part of the valley, hill and mountain farming adopted a multifunctional approach. This approach is better suited to solving problems related to the geo-physical conditions of the area (considered “fragile”), as well as creating job opportunities in the touristic and rural sectors.

##### **4.1 Exploring the origins of the Agriculture Roundtable: process of development, stakeholders involved and policy entrepreneurship**

The Agriculture Roundtable was established in 2015 by the local administration, as an informal table for consultation. The AR is part of a wider strategy the Municipality of Bergamo has been developing, called “Feeding Bergamo” – *Nutrire Bergamo*. The strategy is not a formal policy program yet, but rather a way to comprehensively envision a set of projects around sustainability in food and agriculture, already established in the city of Bergamo for a long time. This strategy would encompass public food procurement activities in schools and other public institutions, which favour organic products coming from local producers, within the urban or peri-urban areas. Moreover, it is planned to carefully assess the amount of public land not used now to destine it to “high-quality agriculture” (Interviewee 15). Table 2 shows the composition of the AR, which, more in general, represents also the variety of actor groups playing a key role in the food panorama of Bergamo.

*Table 2: Overview of the sectors represented in the Bergamo Agriculture Roundtable*

• Academia – University of Bergamo	• Food Business – Café and Restaurant (SC)
• City Council of Bergamo - Mayor	• Alternative Food Networks - Buyers Co-ops (SC)
• Environment Department of Bergamo City Council	• Sustainable Agriculture (SC)
• Environmental Advocacy - Legambiente	• Food Citizens (SC)
• Slow Food (SC)	• Social and Economic Justice (SC)
• Farmers Trade Unions	• Ethical finance (SC)
• Fair Trade (SC)	• Social Inclusion (SC)
• Local Newspaper(SC)	• Environmental Education and Conservation – Botanic Garden

To begin with, a very important group of stakeholders is the one represented by the Network of Sustainable Citizenship (indicated with “SC” in the table). It was created back in 2007, and it has grown to around twenty entities, with various legal natures. The Network is “not the usual association, but rather a cultural, political and economic open project, pursuing active and aware participation of citizens” (Cittadinanza Sostenibile 2015). It has been created to collaborate and cooperate to reach a greater audience and give more visibility to the initiatives independently organised by each of the associations



within SC. The various organisations have different aims and focus, but they all share a common vision about action to support an environmentally, socially and economically sustainable local development. This engagement of an important part of the civil society with sustainability's issues is also demonstrated by the strong embeddedness of short supply chains experiments in the city of Bergamo, such as the so-called Solidarity Purchase Groups (Gruppi di Acquisto Solidale – GAS) and the many farmers' markets (Forno et al. 2013, 2015). Besides the GAS experience, Slow Food is also a very important reality in the city. The participated markets and initiatives organised by the members of the Bergamo's condotta (group) might indicate that Slow Food's philosophy and practice are well-embedded in the food culture of the area, especially due to the great attention reserved to the promotion of local food and wine tourism and economy, associated with territory and biodiversity conservation.

Together with the civil society's organisations, the Mayor (and, to a lesser extent, a few members of the City Council) of Bergamo, represent key actors in the initiation and development of the AR. There is a widespread recognition of the genuine and consistent interest of the Mayor and his administration, for the topic of food sustainability and all the connected issues (Interviewees 10, 16,17 and 20). The Mayor claimed to be personally very close to the Slow Food movement's philosophy, having met in person its very inspiring founder, Carlo Petrini (Interviewee 15). Moreover, the City Council expresses great concern towards the "revalorization" of public areas – part of the "Feeding Bergamo" strategy – meant to be used for enhancing urban green projects, rather than destined to constructions (Interviewee 11). On top of it, the high economic value for fostering the local economy underlying the promotion of food and wine excellences of the territory (comprising the city and the areas surrounding Bergamo), has been considered by the Mayor a great incentive to gather all the stakeholders at the same table, and initiate a dialogue round food (Interviewee 15).

A pivotal role in the process of construction and definition of the Bergamo AR was played by the CORES team (an interdisciplinary research group within University of Bergamo) which already in 2007 organised a conference, at the University of Bergamo, about political consumerism, new forms of critical consumptions and alternative – solidarity – economies, titled "Shopping for Human Rights". In this venue, most of the actors now part of the Sustainable Citizenship Network, were invited to seat at the same table. There, they initiated a dialogue which has encouraged a variety of local initiatives around food and other related issues (Interviewees 10, 12 and 13). The academic interest of CORES towards social and political movements, with special focus on solidarity and alternative economies, has brought its researchers to delve into the reality of Bergamo and its active groups, through an action-oriented approach. In this way, CORES researchers have poured into the city the knowledge gained through their studies, imbuing the local activists and organisations, who, in turn, have integrated it into their own practices and initiatives (Interviewee 10). Since 2007, therefore, Bergamo has established and nurtured a dynamic virtuous cycle of scientific and local knowledge integration. This has represented a crucial step to push further the process towards the creation of an UFS.

The analysis of this process from a policy entrepreneurship perspective sheds light on the key role of (collective) agency of some actors in the city of Bergamo. In this case, the agency of policy entrepreneurship can be unravelled through the identification of some strategies: the generation of knowledge and its diffusion about food system sustainability is a strategy to which various actors have contributed. Nonetheless, the different movements and associations within the AR as well as within the SC network, mostly have knowledge associated with their specific area of interest and activity. CORES researchers have played a crucial role in reconciling these different types of narratives. This activity can be labelled under the defining problems and issues linking strategy.

This combination of broader environmental and social concerns, with more locally embedded political and food activism, fostered the development of a common vision to build a "macro level of shared aspirations"(Stephenson 2011, Westley et al. 2013). The construction of shared aspirations and a common narrative requires also linking actors and building networks, to further encourage collective action. The opportunity to successfully couple narratives and actors is intimately related to the capacity of building trust, motivation and legitimacy among stakeholders. Strong social capital and personal relations are key features of the case of Bergamo. Many interviewees emphasised that Professor Forno (CORES team) strongly encouraged the involvement of the grassroots movements into an institutional

dialogue, with the local administration, towards rethinking and reshaping the urban food system (Interviewees 12, 13 and 17). On top of these interdependent strategies, there is the ability of policy entrepreneurship to exploit so-called windows of opportunity. In Bergamo, a few occasions can be fairly considered as such, and the role of the University has been always crucial. Thus Professor Forno and CORES as policy entrepreneurs was recognising and encouraging the social innovation represented by the creation of SC Network.

Specifically, the entrepreneurial role consisted in pushing the grassroots (niche) movements towards a dialogue with the Institutions. This occurred through the agency of CORES aimed at making the grassroots movements' actors and groups self-aware of what they are and do, as social innovators for a sustainable urban (food) system (Interviewees 12 and 17). In this way, it has been initiated a process of "emergence" of the grassroots movements from a quite circumscribed action arena – mostly made of personal relationships and informal networks – to a more structured group of actors, able to deal with external actors, such as the Municipality. As interviews revealed, the actors involved in the activity of policy entrepreneurship have been directly involved in the initiatives by themselves promoted. Therefore, we can conclude that leading by example is an intrinsic value and activity, which does not need to be separately treated.

## **5. Cork: food as a driver to foster the creation of a Healthy City**

Cork is the Republic of Ireland's second city and while its jurisdictional boundaries enclose a population of 120,000 people, the outlying suburbs and satellite towns bring this up to 300,000. The city displays a sharp spatial component of social disadvantage and, in line with other parts of the country, there are rising levels of diet-related ill-health and one in eight households is regarded as food poor. Paradoxically, Cork regards itself as 'the food capital of Ireland' – in part historical legacy given its role as a provisioning port for the British Empire; but also its more recent profile at the forefront of the contemporary artisan food movement. Consequently, there seemed a strong foundation on which to build some innovative food systems thinking into the city, working at both community and policy levels.

### **5.1 Exploring the origins of the Cork Food Policy Council: process of development, stakeholders involved and policy entrepreneurship**

Cork Food Policy Council (CFPC) was established in 2013, seeking to build upon a successful three-year community food initiative project focussed in a neighbourhood on the north side of the city, and to partner with the Cork Healthy City initiative, a WHO programme to which the city is affiliated. As a multi-stakeholder group, the CFPC seeks to encourage local-level activities while at a policy level to influence "best practice in developing a healthy, sustainable, & resilient food system" (Cork Food Policy Council 2016). The CFPC aims to foster activities that promote the position and value of food within the fabric of city life, given the multifunctional benefits to health, community, infrastructure and social improvement. The CFPC has identified – and recently reasserted - five core values:

- **Health and wellbeing for all** that addresses the importance of a nutritious, balanced diet leading to an effective improvement of physical and mental health for people of all ages;
- **A thriving local economy** that highlights the importance of supporting a variety of food enterprises and job creation utilising regional resources;
- **Resilient, food-friendly communities** promotes the celebration of food and culinary traditions of all cultures through a variety of public events;
- **Lifelong learning & skills** establishes the centrality of enabling everyone the opportunity to learn about growing, cooking and eating good food; and finally,
- **A reduced environmental footprint** establishes a commitment to local, sustainable food.

*Table 3: Overview of the sectors represented in the Cork Food Policy Council*

Academia – University College Cork	Environment and Recreation Department of Cork City Council
Public Health – Health Service Executive and Healthy City Initiative	Food Business – Café and Restaurant
Food Tourism – Food Fab trails	Bia food bank and social volunteering
Environmental Advocacy – Cork Environmental Forum (LA21)	Community Gardening
Planning Department of Cork City Council	Food Retailing - Musgraves
Horticulture – various local partners	Community projects and involvement

The CFPC was started in summer 2013 when a public meeting was called to explore popular interest in such a venture. The convenors of the meeting – Sage, the coordinator of the Cork Healthy Cities Initiative and the leader of the Community Food Initiative (CFI) noted earlier – then proceeded to invite individuals “across the borders” (Interview 9), considered representatives of a variety of food-relevant sectors, with the aim of establishing a Steering Committee for the Food Policy Council. These included the Director of Environment and Recreation services and two staff from Planning of Cork City Council; other representatives come from the English Market (the main municipal food market in the city); Musgraves, a large food retailer; a restaurateur, and several individuals representing the voluntary and community sectors (see Table 3).

There has been a strong connection between the CFPC and the Healthy Cities initiative since the start and to some extent this is reflected in the place of health promotion with regard to activities and statements of the CFPC. The CFI project, for example, initiated a community garden partly as a therapeutic activity in a deprived area, where people suffering mental illness and social exclusion have benefitted. This project continues to be represented on the CFPC Steering Committee and other community projects promoted by the Healthy Cities program that involve food are welcomed. In contrast, although representatives from the City Council sit on the Steering Committee their involvement is not directly related to their posts (Interviewees 7 and 8). Indeed, it was noted how the City Council is hampered by a short-term silo-based approach to policy-making (Interviewees 2, 3, 4, 8 and 9) which makes the multidisciplinary and cross- sectorial aims of the CFPC difficult to connect into local strategies. The composition of the CFPC reflects the geographical focus of activities largely within the boundaries of Cork city. However, it is conscious that it is not well connected to even contiguous areas that fall within Cork County. Here, representatives from the Cork Environmental Forum (CEF), an NGO established under Local Agenda 21 and responsible for promoting sustainable development in the region provide the strongest linkage to this wider context. Nevertheless, the CFPC has made submissions through public consultations on national issues (climate change, Food Harvest 2020) and at County level (reform of farmers’ markets). Yet one constituency that has been somewhat difficult to recruit to the CFPC Steering Committee and which reflects its ‘urban bias’ has been from the farm sector. The agriculture sector of Ireland is heavily specialised in beef and dairy production, with 81% of the agricultural area devoted to pasture, hay and grass silage, a further 11% in rough grazing and only 8% of the land in crops with less than 1% under vegetables (Irish Food Board, 2016). This may be one factor to explain the limited success in developing short food supply chains though some point to a cultural mind-set not yet ready to embrace the opportunity to gain regular access to fairer, healthier and more sustainable food (interviews).

The main steps of the process that led to the formation of the CFPC have been summarised; but how did the agency of policy entrepreneurship specifically influence the development of the CFPC?

As mentioned above, the role of the Chair (Sage) as a fulltime academic would suggest that **knowledge creation and dissemination** might be at the centre of the CFPC’s activities. Indeed, it was noted by other

members that with a research background in food policy he introduced the concept of Policy Councils and their related experiences from North America and their applicability to Cork. Nevertheless, Cork confirmed what was revealed by the Bergamo case: the importance of looking at policy entrepreneurship as a collective agency. Indeed, the role of the two academics has been strongly emphasised and supported by other actors within civil society. For instance, the Cork Environmental Forum has long been involved in leading campaigns and conference organisation to raise awareness about environmental issues. During these meetings, knowledge is co-created and circulates within an interactive and participatory forum, where there are no experts enlightening laymen, but rather participants' discussions and perspectives enrich each other's knowledge (Interviewee 2).

As already mentioned above, the Healthy Cities initiative and its local coordinator, played a crucial role in the **definition of problems** around food, through the connection of a variety of other issues. Specifically, the linking occurred between the topic of health and health promotion – particularly important given Cork's participation in the WHO Healthy Cities initiative - and the particular contribution of food within it. The narrative has been based on the promotion of healthy diet and better-quality food, which is also an "ideal tool to bring people together" (interviewee 9). This coupling has been effective in terms of stakeholders' attraction, due to a wide range of actors Healthy Cities regularly deals with (from political and academic Institutions, to citizens and communities in general). The linkage of issues and concerns occurred together with the **building of networks and connections of various actors**. Critically, the group comprising the Chair of the CFPC, together with the coordinator of the Healthy Cities and the Coordinator of the NICHE project drew upon their own networks, which were very different in terms of composition, to involve like-minded people to sit at the table of the CFPC. The entrepreneurial role in this regard was also played by other stakeholders: members from the Cork Environmental Forum and the food bank 'Bia Food' among others, strongly relied on their long experience and direct contact with people from many different social groups within the city, with whom they had already established trust and personal relations (Interviewees 2 and 3). People who "wear many different hats" within communities are clearly most likely to cover the role of policy entrepreneurs.

**Leading by example**, thus, is about being personally and directly involved with the promoted activities, and represents a critical premise to build the necessary "reputation" and "consistency" within the community (Interviewees 2 and 7). These claims shed light on the critical importance of "inspiring and motivating people" (Interviewee 1) through being present among them and showing the feasibility and tangibility of the proposals and ideas proposed. Having "approved track records" (Interviewee 9) and motivating people through education and especially teaching (and learning) by doing – with pilot projects, for instance - is how collective policy entrepreneurship builds trust, motivation and legitimacy. However, motivation and inspiration are triggered by a robust personal motivation, rooted "in the heart" of those willing to involve people in their initiatives (Interviewee 7). This leads to the conclusion that it is all about "building relationships of trust, with and within the community" (Interviewee 7).

To conclude, the Chair of the CFPC had an important role in creating momentum around food and the establishment of the CFPC. To celebrate the launch of the CFPC in 2014, the Committee organised a 'Feed the City' event, which sourced, prepped and cooked one tonne of vegetables that were destined for landfill and which, instead, were distributed for free to 5000 people. The event was a huge success, with great publicity across national and local television, radio and press, and brought the troubling issue of food waste to a wider audience. The event opened up a great **window of opportunity**, which was strategically exploited to bring the wider issues of diets, nutrition and sustainability of food production and consumption to the widest audience. Indeed, it is recognised that creating 'spectacle' is an important part of capturing the public imagination and offering ideas for alternative practices, and so the CFPC has been involved in several subsequent events such as street feasts and special meals for the refugee community in Cork. It also continues to learn from other food policy councils such as through the UK- based Sustainable Food Cities network, of which it is a member.

## 6. Discussion and conclusions

The analysis of the two cases reveals a few interesting differences and points of discussion, on a theoretical as well as practical level. To begin with, the food narratives are developed and nurtured in the two cities around different socio-economic issues, which are specific to the territory. In Bergamo, food and wine tourism represents a key economic driver for the local development, whereas in Cork, food is mainly envisioned as a tool to promote healthy lifestyles. This is clearly reflected in the agency of policy entrepreneurship. Both cases demonstrate that the capacity to create fitting narratives and shared visions relies on the level of embeddedness of policy entrepreneurship and leadership in the local context. A great level of embeddedness means having a deeper knowledge and familiarity about the community, i.e. its mind-set and attitudes, as well as the local problems and best fitting solutions (at the economic, environmental and social level). The creation of a shared understanding of the system and how to manage it, should involve “the groups and individuals who know the system best, who are embedded within it and who hold a stake in what happens to it” (Stringer et al. 2006). The policy entrepreneurship here analysed proved to be “highly sensitive to the context” (Westley et al. 2013), to fully capture the broad set of interests, knowledge, requests, values and perspectives, and seek consensus. Moreover, embeddedness likely entails strong connections with formal and informal networks within the community, and therefore social capital. The policy entrepreneurship of the two cities widely relies on strong personal relations of trust (based on reputation and “approved track records”), to motivate and involve stakeholders. This is what an “organic leader”, who “comes from the stakeholder community, and can generally draw on extensive social capital”(Ansell and Gash 2012: 18) has the potential to do.

Therefore, the two cases support the argument presented earlier: successful leadership and policy entrepreneurship are often collective and associated with non-positional actors (Meijerink and Stiller 2013, Scholten et al. 2015). However, it is also shown in this research that even in collaborative policy entrepreneurship/leadership there is a focal individual, whose major function is to coordinate the collective actions and strategies implemented by other key actors in the community (Cullen-Lester and Yammarino 2016). This is the role which can be attributed to the researchers involved in both cases. They have been active social actors, who engaged to foster transformative action and diffusion of knowledge (Wittmayer and Shapke 2014). The paramount role of the two Professors as PE in both cases, provide a

further empirical example of the idea that the strategies of policy entrepreneurship for including stakeholders in policy-making is also a way to promote capacity building, and, eventually to stimulate community empowerment, to become active and aware (food) citizens (Fischer 2006). Indeed, empowered citizens can potentially have a greater role in future policy-making processes, in the attempt to promote a more democratic society, and push the social, environmental and economic sustainability transition forward.

## References

- Ansell, C. and Gash, A. (2012) ‘Stewards, Mediators, and Catalysts: Toward a Model of Collaborative Leadership’. *Innovation Journal* 17 (1)
- Ardoin, N.M., Gould, R.K., Kelsey, E., and Fielding-Singh, P. (2014) ‘Collaborative and Transformational Leadership in the Environmental Realm’. *Journal of Environmental Policy & Planning* [online] 17 (3), 360–380
- Brouwer, S. (2015) *Policy Entrepreneurs in Water Governance: Strategies for Change*. Springer Netherlands
- Brouwer, S. and Biermann, F. (2011) ‘Towards Adaptive Management: Examining the Strategies of Policy Entrepreneurs in Dutch Water Management’. *Ecology and Society* 16 (4)
- Cittadinanza Sostenibile (2015) *Piccola Guida Alla Cittadinanza Sostenibile - Little Guide for Sustainable Citizenship*. Bergamo: Grafica Monti Snc - Bergamo
- Cork Food Policy Council (2016) available from <<http://corkfoodpolicycouncil.com/>> [5 May 2016]
- Crona, B., Ernstson, H., Reed, M., Prell, C., and Hubacek, K. (2011) ‘Combining Social Network Approaches with Social Theories to Improve Understanding of Natural Resource Governance’. In *Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. ed. by Bodin, Ö. and Prell, C. Cambridge University Press

- Cullen-Lester, K.L. and Yammarino, F.J. (2016) 'Collective and Network Approaches to Leadership: Special Issue Introduction'. in *The Leadership Quarterly*. vol. 27 (2). 173–180
- Fischer, F. (2006) 'Participatory Governance as Deliberative Empowerment The Cultural Politics of Discursive Space'. *American Review of Public Administration* Volume 36 (1), 19–40
- Folke, C., Hahn, T., Olsson, P., and Norberg, J. (2005) 'ADAPTIVE GOVERNANCE OF SOCIAL-ECOLOGICAL SYSTEMS'. *Annual Review of Environment and Resources* [online] 30 (1), 441–473
- Forno, F., Grasseni, C., and Signori, S. (2015) 'Italy's Solidarity Purchase Groups as "citizenship Labs"'. in *Putting Sustainability into Practice: Applications and Advances in Research on Sustainable Consumption*. Edward Elgar Publishing, 67
- Forno, F., Grasseni, C., and Signori, S. (2013) *Dentro Il Capitale Delle Relazioni: Provincia Di Bergamo*. 1. Bergamo - Italy
- Imperial, M.T., Ospina, S., Johnston, E., O'Leary, R., Thomsen, J., Williams, P., and Johnson, S. (2016) 'Understanding Leadership in a World of Shared Problems: Advancing Network Governance in Large Landscape Conservation'. *Frontiers in Ecology and the Environment* 14 (3), 126–134
- Kingdon, J.W. (2003) *Agendas, Alternatives, and Public Policies*. Longman Pub Group
- Meijerink, S. and Huitema, D. (2010) 'Policy Entrepreneurs and Change Strategies : Lessons from Sixteen Case Studies of Water Transitions around the Globe'. *Ecology and Society* 15 (2)
- Meijerink, S. and Stiller, S. (2013) 'What Kind of Leadership Do We Need for Climate Adaptation? A Framework for Analyzing Leadership Objectives, Functions, and Tasks in Climate Change Adaptation'. *Environment and Planning C: Government and Policy* 31 (2), 240–256
- Mendes, W. (2007) 'Negotiating a Place for "Sustainability" Policies in Municipal Planning and Governance: The Role of Scalar Discourses and Practices'. *Space and Polity* 11 (1), 95–119
- Mintrom, M. and Norman, P. (2009) 'Policy Entrepreneurship and Policy Change'. *Policy Studies Journal* 37 (4), 649–667
- Moragues-Faus, A. and Morgan, K. (2015) 'Reframing the Foodscape: The Emergent World of Urban Food Policy'. *Environment and Planning A* 47 (7), 1558–1573
- Olsson, P., Gunderson, L.H., Carpenter, S.R., Ryan, P., Lebel, L., Folke, C., and Holling, C.S. (2006) 'Shooting the Rapids: Navigating Transitions to Adaptive Governance of Social-Ecological Systems'. *Ecology and Society* [online] 11 (1), 18
- Pritchard, B., Rodomiro, O., and Meera, S. (2016) *Routledge Handbook of Food and Nutrition Security*. Routledge
- Sage, C. (2014) 'The Transition Movement and Food Sovereignty: From Local Resilience to Global Engagement in Food System Transformation'. *Journal of Consumer Culture* 14 (2), 254–275
- Scholten, P., Keskitalo, E.C.H., and Meijerink, S. (2015) 'Bottom-up Initiatives toward Climate Change Adaptation in Cases in the Netherlands and the UK: A Complexity Leadership Perspective'. *Environment and Planning C: Government and Policy* 33 (5), 1024–1038
- Seyfang, G. and Smith, A. (2007) 'Grassroots Innovations for Sustainable Development: Towards a New Research and Policy Agenda'. *Environmental Politics* [online] 16 (4), 584–603
- De Shutter, O. (2011) 'How Not to Think of Land-Grabbing: Three Critiques of Large-Scale Investments in Farmland.' *The Journal of Peasant Studies* 38 (2), 249–279
- Stephenson, M.O. (2011) 'Considering the Relationships among Social Conflict, Social Imaginaries, Resilience, and Community-Based Organization Leadership'. *Ecology and Society* 16 (1)
- Stringer, L.C., Dougill, A.J., Fraser, E., Hubacek, K., Prell, C., and Reed, M.S. (2006) 'Unpacking "participation" in the Adaptive Management of Social Ecological Systems: A Critical Review'. *Ecology and Society* 11 (2), 22
- De Tavernier, J. (2012) 'Food Citizenship: Is There a Duty for Responsible Consumption?' *Journal of Agricultural and Environmental Ethics* [online] 25 (6), 895–907
- Westley, F., Tj, O., Schultz, L., Olsson, P., Folke, C., Bodin, Ö., and Crona, B. (2013) 'A Theory of Transformative Agency in Linked Social-Ecological Systems'. *Ecology and Society* [online] 18 (3)
- Wittmayer, J.M. and Shapke, N. (2014) 'Action, Research and Participation: Roles of Researchers in Sustainability Transitions'. *Sustainability Science* 9 (4), 483–496
- Zahariadis, N. (2014) 'Ambiguity and Multiple Streams'. *Theories of the Policy Process* 25–58

## **Shared urban gardens for transition towards democratic and ecological cities (France and Italy)**

**Sandrine Glatron<sup>1</sup>, Victoria Sachsé<sup>2</sup>, Beatrice Del Monte<sup>3</sup>,**

<sup>1</sup>Dynamiques Européennes (DynamE, CNRS/Université de Strasbourg),

<sup>2</sup>ADEME/DynamE, PhD student (DynamE, CNRS/Université de Strasbourg),

<sup>3</sup>NASP (Network for the Advancement of Social and Political Studies), Universities of Turin & Milano,

Email: sandrine.glatron@misha.fr victoria.sachse@yahoo.fr beatricedlm@libero.it

---

Experiences of self-organization and urban-based land access movement that occur through collective urban gardens rise our interest as they constitute a growing political process that could be part of the social ecological transition towards a more sustainable society (Juan, 2011). Through the collective gardening (in various forms we can meet in France and Italy), we study the political fabric those bottom initiatives are weaving. We wonder how the gardens are places where to experiment the "commons" (Eizenberg 2012), collaborative practices and innovative politics where new engagement forms are invented and practiced even without conceiving at first they are politically or theoretically embedded. The reflexion about "commons" is an important stake, mirrored by the slogan "neither private nor public, common" spread out by the urban citizen movements who claim the right to the city (Purcell 2002, Harvey 2008). It leads to consider the various links gardening initiatives are developing with local institutions (Camps-Calvet et al. 2016).

Through collective gardening initiatives in Strasbourg and Rome, we study how groups of citizens are running spaces in self-government forms to grow food, within new frames of productions and cultivation methods (such as those of organic approaches, permaculture or cross-cultural experiences).

More generally: how the common gardens, often connected with other citizens' initiatives related to food production and delivery in town (such as community supported agriculture, cooperatives), can participate in the snowball effect that irrigate society to transform it, by renewing the production, sharing and knowledge of goods, and specially the agricultural ones? Can they be considered to be part of (or helping) the exercise of democracy (participative and collective management) (Zask, 2016)?

Community gardens go beyond the local or national context, having expended at the European level since the 1990s. That is why we are interested in their development in various contexts to grasp the diversity and similarities of the experiments. We will start our presentation defining the management modes of the collective urban gardens we studied in Rome and Strasbourg. These conurbations offer two very different contexts: Strasbourg being a very "planned" city, whose daily management is fluent and which authorities pay attention and support to citizen initiatives. It is radically opposed to Roma, a metropolis whose erratic development is not always correctly controlled by the municipality.

After a description of the collective features of our gardens, which differs from the individual society and property we are facing in the urban fabric in general, we will focus on showing how these experiences can be understood as contemporary "commons" and as spaces of grassroot political production, oriented to the collective management of local environments. Our contribution will address how these places can constitute an real starting point in changing citizens' attitudes towards food and environment.

## I. Community gardens in Rome and Strasbourg: organization and collective experiments

### I.1. The spatial and institutional organization of gardens: a tell-tale of the gardeners values

The spatial organization, especially the place materially left to the collective indicates gardens democratic intentions. Therefore, when studying the design of gardens, with an in-depth (short) history of its shaping, one discovers the design, the theoretical and practical intentions devoted to the functioning. Examining the management methods allow to deepen this very democratic aim of community gardens.

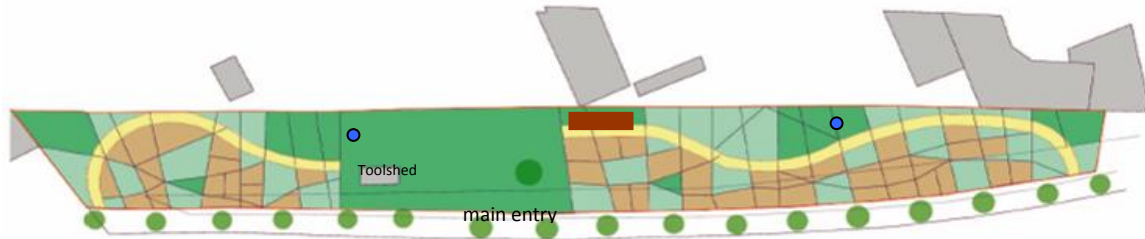


Figure 1: Community garden "The Lombric Hardi" in Strasbourg: plot pattern (source: E. Bruzi, 2012)



Figure 2: Community garden "Tre Fontane", Roma, (Sandrine Glatron and Victoria Sachsé, 2017)

The figures above show how much gardeners are willing to give the plots an "artistic" design. For the Lombric Hardi in Strasbourg, the group devoted a whole meeting to decide how to collectively plan and organise the place, once the land was made available by the town authorities (end of 2011). The garden is organized around pathways, following an "intellectual" reflection in 2D, with a design clearly directed towards leisure and socialization rather than towards the agronomic efficiency (fig.1). A great place is left to the collective activities : tables and banks, shelter against the sun, swings for the children, toolshed, composts, "toilets", water pumps and recuperator for everybody, and even beehives (fig.3).





*Figure 3: Beehives in the community garden « Tre Fontane », Roma  
(photo : Victoria Sachsé, may 2017)*

In The Lombric Hardi as in Tre Fontane, gardeners are plowing, seeding and harvesting together in collective plots. Other common cultivation areas are shared: an aromatic spiral and a spice-path, flowerbeds along fences and paths, for example, with a claimed aesthetic dimension when planting trees or flowers .... In tre Fontane, there is also a the didactic / pedagogical kitchen garden that witness a special care for the food issue.



*Figure 4: Didactic garden in Tre Fontane (photo : Victoria Sachsé, may 2017)*

## **I. 2. Functioning of gardens: from assertive principles to everyday democratic practices**

The (short) history of the community gardens is deeply rooted in democratic demands and participatory practices on a daily basis.

The functioning principles, established by deliberation, head to build a microcosm as democratic as possible: it appears in the written purposes of the textes that "legally" found the community gardens. They state that "the project aims at democratic participation, improving the standard of living of urban dwellers and promoting models of environmental sustainability". The rules for allocating "individual" plots are multiple, showing different relationship with the garden group, but, in any case, they pursue a principle of equity. In Strasbourg, although not explicitly mentioning it, the principle of "equality" in the treatment of gardeners underlies the allocation of parcels, as a result of the demands and without any "sorting" or criteria discriminating or prioritizing a given population. So far, after a few years of existence, in France (3 studied cases in Strasbourg), competition as well as the influx of demands naturally regulate, balancing inputs and outputs so as to have an almost constant stock of gardeners. In

Rome, Tre Fontane and Garbatella, on the contrary, the allocation of the plots follows a hierarchical way, in the sense that the organizing committee receives requests, assesses whether the persons meet the criteria required (proximity, precariousness: unemployed, inactive, retired, student,...) according to the regulation and then chooses by prioritizing the attributions. There is a long waiting list. Do the pressure lead to very different operating principles? Once there are trade-offs, choices to be made and risks of conflict, the decision-making principles need to be clarified.

Regarding gardeners commitment, in Roma and Strasbourg, there is a sort of injunction from the founding members to involve gardeners in common tasks. Participation in the management of common spaces and the organization of joint events, with varying degrees of constraint, are conditions for being allowed to cultivating plots.

The associative model proposed is relatively "classical" (in Strasbourg, to form an association obeying the 1905 Law -articles 21 to 79-3 of the local civil code- is a necessity to be entrusted the landfield of the garden). A directive committee or bureau is elected at the annual plenary assembly which is a minimum requisite of the french association, by law. At the Lombric Hardi, the President is randomly selected from the members who are attending the annual meeting. Assemblies are the moment and place decisions are made concerning the association orientations, the management of disputes, the promotion of activities etc. In Italy, the general assembly meets formally 3 - 4 times a year and allows all members of the association to participate, make proposals, discuss about the functioning. The decision-making methods remain conventional, by majority when decisions are to be taken (almost always by show of hands). Nonetheless, flexibility is claimed (in the Lombric Hardi) to avoid falling into the "political game" or in a kind of sclerosis which gardeners fear.

Everywhere, thematic groups are organized to animate the collective tasks: maintenance of equipment, tools and pathways, compost, the didactic kitchen garden, "events", etc. These groups organize themselves to meet and carry out their own activities. Experiments try to establish a regularity of the meetings (the first Saturday of the month for an aperitif and collective work, the Pentecost bank holiday to eat the vegetables mixed in a common soup, etc.), but most of the information passes through the internet for improvised appointments.

In any case, there is more or less a "horizontal" functioning where the debate is open with everyone without hierarchy or precedence or filter, quite in tune with the times: the Internet remains the major tool for discussion and planning of the activity (Lombric Hardi) but the encounters are also very frequent, often around nuclei of more invested gardeners. However, over the years, resource persons have changed, which ensures the functioning of a true participation of all those who wish to do so.

## **II. "Political" interpretations of citizen investment in the garden**

Through our various examples, we seek to identify the forms of political commitment in the gardens. Is it a citizen engagement, a militant or a necessary / everyday act that does not consider itself political? The observation of the history as well as the interviews with the gardeners give us clues. Here, we try to have a "critical" approach and give, at the same time, a picture of how do the gardeners represent the political aspect of their investment.

Observing the gardens and the practices that take place there, we can describe the different types of gardeners commitment: from the political individual, who's been engaged for years to the people who come specifically for the vegetable garden but eventually becomes a daily presence necessary for the functioning of such an experiment.

### **II.1. Political background of the founders**

Among the different types of actors of the community gardens is the figure of the founding member (they are often several per garden, "the hard core") who is part of the initial project and has a "politicized" vision about occupying a soil to transform it into a garden. He has a proven and proclaimed his militant approach. This phenomenon can be clearly observed in the Garbatella urban garden as well as in Tre Fontane.

In the Lombric Hardi, the idea of creating a collective garden was launched by the members of Ecologis, Strasbourg's first participative housing project, "delivered" in 2010: they requested access to a plot of unused land close to their building. The group who launched the community garden idea, in the case of the Lombric Hardi ("selfpromotors"), reflects the participatory dimension of the initiative. The same animates the collective "Eco-quartier Strasbourg", with the idea of a citizen city and a living urban community. The most active gardeners, or the central or founder nucleus, are often inserted in other collectives that question the democracy issue and its very exercise: they are involved in the food short supply chain (associations for the peasant agriculture support, cooperative shops, guerrilla gardening), in network promoting production / exchange of goods and services (seeds, local / complementary money). In Roma, the Italian community gardens of Garbatella, ExSnia and Tre Fontane are anchored in the history of the defense of the right to the city, fighting land speculation, circa 2000. In any case, the activism within the gardens is quite clear. The gardeners, in particular the "founders" claim the right to be able to act as inhabitants on the public soil, and they act without passing through the public authority seen as passive or proposing uses that the gardeners consider deleterious, although in Strasbourg the agreement of the public authorities is expected (and obtained with the provision of land awaiting further allocations).

In keeping on examining the gardens experiences, it will be necessary to wonder how these democratic arrangements can be "snowball" experiences. Everyday "gardeners" (those who did not necessarily carry the creation of the gardens) attitudes and discourses partly answers to this question.

## **II.2. The gardeners**

Part of the members seem less driving force in the process of animation and initiatives. However, many actions demonstrate a real commitment.

For example, the mere fact of caring for a parcel of land in one of these experiences is sometimes a genuine sign of support for the initiative. Gardeners come at least 3 times a week to take care of their plot and this is considered by some to be a contribution to the whole initiative. In the same way, although organizing events isn't shared by everybody, the good level of participation testifies that people who do not want or sometimes do not have the time to commit appreciate the collective dimension and the public aspect of the meetings. We observed that the public events are not only attended by the gardeners but also by their friends, families and by people outside the association.

Most of the time, the gardeners are here to be in a "parallel word" for a few moments: they don't feel like it's a political engagement. Their attendance might have an existential dimension as they get here some rest from their busy or worried lives. It is also a place for people from various social spheres to meet.

Most of all, the trendy DIY, which rise up against all forms of standardization and commodification of products, finds her a perfect place to express. Doing things, and doing them together are here a central issue, and they are showing up, openly, in very frequented urban areas. That is why they are likely to snowball. A gardener testifies by suggesting "if people see that you can do it then it make it possible to act." This quote is a practical illustration of the idea of Jacques Ion, Spyros Franguiadakis and Pascal Viot about the urgency for the new militants is to be formed "by and in action, and not by an ideological, trade union or political adherence" (Ion, 2005). This idea is opposed to all the political discourses conveying a will to convince: the gardens are a concrete proof that changes on one's neighborhood, one's territory are possible, they represent a form of calling, a daily visibility of a citizen political act.

New environmental social movements and citizens' practices are always more seen as being not "political" in the traditional sense. Indeed, they often show a strong ideology or general political frame that drive their collective action. Nevertheless, their daily practices and engagements, which materialize in local public spaces around a specific concern, can be interpreted as political acts (Certomà 2016) who states that: "They do not form an assembly in the traditional sense, such as a dedicated situation in which they directly face one another's idea, but they are politically active in practically dealing with peculiar forms and functioning of the world". We claim that this is particularly true in the case of the urban community gardens we investigated, because, actors locally gather for a common purpose, continuously and interactively transform a public space that become political through their material



action (Certomà 2016), even if the involved actors have very different backgrounds, sometimes different values, and might frequently disagree.

### II.3. Creating commons?

This political dimension, more or less conscious and assumed by the gardeners, leads (clearly or not) to a questioning of the classic ways of managing the city. The "right to the city" is sometimes claimed, as evidenced by the inscription in the "mural" (fig.5) "neither private, nor public, common".



Figure 5: a public claim for commons (Source : La Repubblica, 14 mars 2016, [http://roma.repubblica.it/cronaca/2016/03/15/foto/roma\\_a\\_porta\\_maggiore-135562937/1/#1](http://roma.repubblica.it/cronaca/2016/03/15/foto/roma_a_porta_maggiore-135562937/1/#1))

After having examined the functioning of our gardens, can we speak of a real will to create commons, as a renewal in forms of urban spaces occupation and management?

Some definitions give us clues: Zask (2016) define a shared gardening space as a common good, even if plots are individually cultivated and the products (fruits, seeds, knowledge, experiences) can be divided between the associates or given to strangers. "The community ground thus reveals the close links between a practice situated, concrete and localized, a shared governance, and the recognition by the participants of the community of the properties and goods, of which some are distributed and others shared" (Zask 2016: 212). For Dardot and Laval (2014), a "political principle [is necessary] "from which commons can be built and related to in order to preserve them, to extend them, to make them live", with an selfgovernment which allow to develop common projects, collective management and decisions. The more or less conflicting relationship between gardeners and citydwellers with the local authorities is to be examined too: in the case of Strasbourg, for example, the city accepts and even foster gardening projects (as well as participatory habitat initiatives that constitute a very remarkable political will) and it leads both to a great collaboration for the creation of grassroot initiatives and the absence of hard debates on the status of the land. This does not prevent anyone from thinking that gardens are seen as common. No need for negotiation, no opposition, the local authorities being supportive and even sometimes initiating with a clear will to install a vibrant urban democracy. Therefore, the city "frames" the initiatives quite strongly to lead to this living democracy: the gardens chart stipulates they must be open towards the neighborhood and greet any citizen. Many of the gardens are not enclosed (the fence is often light, or small, with or without a shared key/ entry code). The absence of closure is symbolic and reflects the initiative's openness. This issue of fencing comes up regularly among gardeners, notably because of possible degradation or theft. Several questions are then raised, without necessarily being decided: safety of people and goods, aesthetics, openness to everybody. It clearly joins the debate about enclosure and the private/public forms of property for a minority / majority.

Those definitions and observations highlight that the community gardens we studied can be considered commons, notwithstanding the important question of the property and the Right.

## Conclusion

In the cases we studied, gardening is an important vector for the adhesion of urban communities to collective projects rooted in the soil and very "practical". Their function for local sociability is often central, especially when places are small, but they have an essential political and symbolic significance for the "living and making together", especially as some gardeners are connected to other experiences and networks linked to the transition movement.

The organizational structures of these initiatives are therefore very interesting.

- What characterizes these experiences is the "citizens" process to appropriate a piece of public space and to propose a project that will be mainly managed by themselves. We leave the usual consultative frameworks or participatory methods to find elements that claim the civic right to participate (Purcell 2008) and are implemented, whether in Rome or in Strasbourg, in different ways.
- Concerning the internal management of these gardens, one cannot generalize by saying that they are models or that they are replicable. They have the common characteristics of being experiences, places where precisely horizontal type of organizations are experimented (hazard drawing, collective management, workshops).
- We proposed here to read these initiatives as experiences of building "common", in the sense that they are in motion, there is no "ready-made universal scheme" but a movement, a citizen's practice at work that changes form according to the contexts.

We feel like these initiatives are part of a great transformation and metamorphosis movement, as described by E. Morin (2010), as experiments that sometimes do not know each other, are not recorded but are part of a global movement seeking "a plurality of reforming paths". Community gardens, alongside other initiatives that often intersect through their participants and shared places, are thus a dual resource for new uses and practices of the urban space, political as well as material. Here, the food (growing, sharing, cooking it) plays a federative role that roots and irrigate several aspects of society and helps projecting new forms of living together.

## References

- Camps-Calvet, M., Langemeyer, J., Calvet-Mir, L., & Gómez-Baggethun, E. (2016). Ecosystem services provided by urban gardens in Barcelona, Spain: insights for policy and planning. *Environmental Science & Policy*, 62, 14-23.
- Certomà, C. (2016) A new season for planning': urban gardening as informal planning in Rome. *Geografiska Annaler: Series B, Human Geography* 98 (2): 109–126
- Eizenberg, E. (2012), Actually Existing Commons: Three Moments of Space of Community Gardens in New York City. *Antipode*, 44: 764–782
- Harvey, D., 2008. The Right to the City. *New Left Review* 53, 23-40
- Heynen, N., Kaika, M., Swyngedouw E., 2006. In the nature of cities, Urban political ecology and the politics of urban metabolism (edited by). Routledge, London and New York.
- Ion J., Franguiadakis S., Viot P., 2005. *Militer aujourd'hui, Autrement*, Paris.
- Juan, S., La transition écologique, Toulouse, ERES, « Sociologie économique », 2011, 288 pages.
- Mathieu, L., 2013, Engagement associatif, militantisme politique : entre parcours individuels et évolutions structurales, conférence : « les associations et l'évitement du politique ».
- Purcell, M., 2002. Excavating Lefebvre: The right to the city and its urban politics of the inhabitant. *GeoJournal* 58, 99-108.
- Morin, E., 2010, *Eloge de la métamorphose*, Le Monde, 9 janvier 2010
- Zask, J., 2016, *La démocratie aux champs. Du jardin d'Éden aux jardins partagés, comment l'agriculture cultive les valeurs démocratiques*. Ed. La découverte, Paris, 256p.

# Pathways for enabling local food policies: the role of people's participation

Jess Halliday & Corinna Hawkes<sup>1</sup>

<sup>1</sup>Independent researcher, Centre for Food Policy, City, University of London

## Introduction

A number of city governments, in both the global North and the South, have introduced food policies to address challenges they face, such as food insecurity, high obesity rates, economic decline, and food waste. A body of literature highlights the importance of participation by people who are most affected by these urban food policy initiatives. People's participation makes the policy more relevant and increases take-up (IPES-Food, 2017), provides creativity and specialist knowledge (Derkzen & Morgan, 2012; Wekerle, 2004), mobilizes resources and capacity (Schiff, 2008), and fosters shared ownership (de Zeeuw & Dubbeling, 2015).

However to date there has been little attention to how city governments can enable people's involvement, nor to how local people themselves can ensure their views are taken into account. This paper aims to help bridge this gap by identifying factors that enabled people's participation, and factors that impeded it, in five urban food policies: Belo Horizonte's approach to food security (Brazil); the Nairobi Urban Agriculture Promotion and Regulation Act (Kenya); Amsterdam Healthy Weight Programme (The Netherlands); the Golden Horseshoe Food and Farming Plan (Canada); and Detroit's urban agriculture ordinance (USA).

For each, the paper examines the political economy of the policy process: the origins of the policy; the actors and sectors that participated, their interests, and dynamics and power balances between them; governance structures; and distribution of policy powers between the city government and other policy levels.

While the experiences are different, they nonetheless provide insights that will prove useful to actors in other cities who wish to encourage full participation of people for whom the policy is intended.

## Methodology

While the subject of this paper is factors that enable public participation in urban food policies, the findings are part of a larger study that aimed to provide insights into factors that enable the development and delivery of urban food policies, and how these enablers can be harnessed and barriers overcome (IPES-Food, 2017).

For this larger work, the case studies were selected through a two-stage process. The first stage involved a review of existing literature documenting examples of urban food policy (e.g. Deakin et al 2016, Forster et al 2015, Calori & Magarini 2016, Jejou & Carey 2015, Baker & de Zeeuw 2015, Center for a Liveable Future 2015, Moragues-Faus et al 2013). This provided us with a long-list of potential case studies.

In the second stage, we applied three criteria to the long-list. We sought:

1. Policies for which there was proof of implementation in practice.
2. Diversity of experiences, with representation of:
  - different governance mechanisms and policy pathways, such as 'top-down' initiation and leadership versus 'bottom-up';
  - different parts of the world;
  - different issues as the primary focus, such as food security, public health, local economy;
  - different territorial coverage, from cities with administrative limits to larger city regions.
3. Assurance that there was adequate information about the policy, and viable contacts within the cities who could share information about the policy process.

While we initially sought only examples that had been rigorously evaluated, we found that monitoring and evaluation is, in many cases, lacking. This was not deemed to be problematic, however, as we set out to study policy processes and not to evaluate policies' impacts.

We collected data through document analysis and through interviews.

All documents analysed were in the public domain and were sourced online, primarily through Google searches. Websites of organizations known to be involved were also searched, as were the online

archives of local newspapers. Documentary sources included: policy documents, minutes from council meetings and other organizations, websites of local authorities and other organizations, media reports, and academic articles.

For each case study, semi-structured interviews were carried out with at least two actors who had been involved with the development and/or implementation of the policy, from different organizations. Wherever possible, interviews were carried out by Skype or telephone; where verbal interviews were not possible (either due to language barriers or lack of time on the part of the interviewee), questions were sent by email.

Data were analysed through a political economy lens, in line with the conceptual frame works employed by Shiffman and Smith (2007) who highlight the central role of power — of actors, of ideas and framing, of political contexts, and of the issues themselves — in the policy process. Analysis was also informed by Pinstrip-Andersen's (1993) conclusions that to understand the policy process it is essential to understand the relative power of key actors in the process, their goals and rationales, vested interests, interactions, dependencies, and competitive relationships.

For each case study, we identified factors that had advanced the policy process (enablers), and those that had held it back (barriers). The enablers and barriers from all the cases were then mapped alongside each other, and we sought factors that were common to at least two of the five cases.

## **Case study findings**

### **Belo Horizonte's approach to food security (Brazil)**

In 1993 Belo Horizonte established an integrated approach to food security policy, in an effort to redress inequality and improve citizens' access to sufficient, healthy and nutritious food. The guiding principle is the human right to food: instead of charitable or emergency food provisioning, the policy mainstreams the pursuit of inclusive, universal food and nutrition security.

The policy encompasses a range of programmes that are managed by SMASAN — the 'Municipal Secretariat for Food and Nutrition Security' — under six workstreams: subsidized food sales; food and nutrition assistance; supply and regulation of food markets; support for urban agriculture; food and nutrition education; and job and income creation.

The policy process was formally initiated by the then-Mayor Patrus Ananias, who made it a key issue during his term in office (1993-1997). At the time, however, there was considerable civil society pressure and popular support for addressing escalating food insecurity across Brazil, making it an important rallying point that was hard for elected governments to ignore.

Although implementation is led from within the municipal government, civil society and the private sector play important roles as programme partners. Moreover, public participation is built into the governance structure as one of SMASAN's three adjunct advisory boards, COMUSAN (the Municipal Council of Food and Nutrition Security) is a vehicle for civil society participation. Two thirds of its members are from the education and research sectors, social movements, consumer groups, the food industry, the farming sector, and professional organizations, all of whom participate on a voluntary basis. The remaining members are representatives of municipal departments. This brings an element of formality and accountability to otherwise voluntary proceedings; indeed, COMUSAN's predecessor, COMASA, collapsed in 1998 when voluntary members stopped attending. (The other two advisory boards, as of early 2017, are CAISAN-BH -- the Intersectoral Chamber of Food and Nutrition Security of Belo Horizonte -- made up of municipal staff, and FOMASA -- Municipal Forum of Food Supply and Food Security -- made up of food industry representatives).

COMUSAN helps ensure public participation in ongoing policy processes, ensuring policy is relevant to the needs of the city. COMUSAN is leading development of a new Food and Nutrition Security Plan, informed by a public conference held in 2016.

### **The Nairobi Urban Agriculture Promotion and Regulation Act (Kenya)**

The 2015 Nairobi Urban Agriculture Promotion and Regulation Act is intended to boost food security by facilitating food production in the city, to promote job creation, value addition and value chain development, to protect food safety and environmental health, and to regulate access to

land and other resources (Nairobi City County, 2015).

The Act makes the Nairobi City County Government explicitly responsible for training farmers, for ensuring their access to organic waste, and for developing marketing infrastructure. It must also monitor and regulate quality and hygiene standards, and promote animal welfare and traceability.

The new law represents a U-turn in the city authorities' attitude to urban agriculture following decades of opposition and disruption of poor farmers' efforts to grow food. It came about following constitutional reform and the subsequent devolution of agriculture to the newly-created County level of government. What is more, civil society actors worked for more than 20 years to create an enabling environment for food production in the city. They fostered strong and trusting relationships with supportive civil servants at the national level, raised public awareness through the media and, through NEFSALF (Nairobi and Environs Food Security, Agriculture and Livestock Forum), trained farmers and empowering them to defend their interests and counter harassment by organizing into a collective lobbying group.

The policy process was participatory, involving NGOs and consultations with urban farmers. Implementation of the Act is led by the Executive Committee Member for Agriculture, Livestock and Fisheries, who is preparing a strategic plan for urban agriculture. He is advised by the Nairobi City County Urban Agriculture Promotion Advisory Board made up of actors with expertise in urban planning, agriculture, public health, and economics.

### **Amsterdam Healthy Weight Programme (The Netherlands)**

The objective of the Amsterdam Healthy Weight Programme (AAGG) is to eradicate overweight and obesity in the city by 2033. It is aimed at all children under 19 and their parents, care-givers and teachers, with a particular focus on children who are already obese and those from high risk social groups.

The AAGG contains integrated actions across the departments of public health, healthcare, education, sports, youth, poverty, community work, economic affairs, public spaces and physical planning, and organizations from outside local government. It focuses actions on using local government powers and responsibilities to address the structural causes of obesity — that is, individual lifestyle factors, values and psychological aspects underlying them, the social and physical environment, and living and working conditions.

The AAGG was drawn up by city government actors and renowned academics in the field of obesity, who served as consultants. Civil society and community representatives were not invited to participate in policy development. However, community groups, religious organizations and citizens do have a vital role to play in implementation.

The AAGG team holds public meetings to determine programmes that would be most beneficial to each neighbourhood, and to help individuals and community groups change their practices and policies to promote healthier eating and exercise. It has learned the importance of engaging directly with people who are affected by the problem, and that the most useful information can be obtained by listening to individuals' needs and wishes, rather than asking pre-set questions.

By listening to community needs, the AAGG team has generated considerable support from target beneficiaries and promoted take up of services by those who need them most.

### **The Golden Horseshoe Food and Farming Plan (Canada)**

The Golden Horseshoe Food and Farming Plan 2021 (GHFFP) is a ten-year plan to safeguard the viability of the food and farming sector in the rapidly-urbanising region around Toronto, Canada. The 'Golden Horseshoe' covers 10,097km<sup>2</sup> around the Western shores of Lake Ontario and includes seven municipal government areas.

Implementation of the GHFFP is overseen by the Golden Horseshoe Food and Farming Alliance, a powerful voice in lobbying over food and farming matters in the region whose membership includes representatives of all seven municipalities, provincial bodies, farm organizations, and other commercial, civil society and research entities. The Alliance is an effective governance body as members are bound by terms of reference that hold them to account for meeting attendance. Moreover, the executive director



(the Alliance's only employee) plays an important role in marshalling debate between actors from different perspectives and promoting consensus.

To promote a broad base of participation in the Alliance, members of the initial working group that devised the GHFFP drew up an inventory of all helpful actors and organizations with an interest in food and farming in the Golden Horseshoe to invite. They also leveraged their professional networks.

Even so, experience to date has shown that it is not always possible for those whose involvement is desirable to participate. Barriers include the inability for farmers or business owners to take time away from their core daily activities, or lack of familiarity with meeting-based collaboration. To overcome these barriers, the Alliance works through representative groups, such as the Federations of Agriculture rather than individual farmers. The executive director is willing to make special arrangements to enable participation in specific activities, such as lobbying days, by those who are not able to take part in meetings on a regular basis.

### **Detroit's urban agriculture ordinance (USA)**

In 2013, the US city of Detroit adopted its first urban agriculture zoning ordinance, formally permitting, promoting and regulating certain types of food production as a viable land use. Following decades of economic crisis and population decline, a huge amount of abandoned, foreclosed property has fallen into public ownership, remaining vacant and overgrown. The urban agriculture movement, driven predominantly by black communities at the grassroots level, has sought to take control of the urban environment and to improve residents' access to fresh, nutritious food -- yet although vegetable growing in the city was not illegal, neither was it a recognized land use.

The ordinance process was initiated and driven by a planner working for the City of Detroit Planning Commission. The individual has been involved in the Detroit Black Community Food Security Coalition and the urban agriculture movement in a personal capacity. Consequently, they had legitimacy both in the eyes of the City of Detroit and the community. The planner consciously promoted participation, drawing on their own networks to convene a work group made up of actors from across city departments and representatives of urban agriculture groups of all types and sizes. In addition, they held community consultations on the draft ordinance.

When it came to drawing up a second urban agriculture ordinance on livestock, a more contentious issue since rearing animals in the city was illegal, the planner adapted the process to enable those already farming animals to participate without fear of reprisals from city officials. Instead of group meetings, they held one-on-one meetings with actors whose input was required.

There is no formal on-going governance structure in place for implementation or to guide updates -- although a long-term advisory board was originally planned. A consequence has been lack of continuous awareness-raising both within City departments and on the part of urban farmers, so that there have been some barriers to implementation and permit take up has been lower than expected.

### **Conclusion**

Drawing on the evidence from these case studies, we identified a set of factors that can enable public participation in the development and implementation of urban food policies.

First, **bottom-up pressure to take policy action over a food issue can pave the way for community involvement** in policy development and implementation, as demonstrated in Belo Horizonte and Nairobi. While helpful, bottom-up pressure is not a pre-requisite of public participation however. City governments can also consciously enable community involvement further down the line, in the implementation phase, as was the case in Amsterdam.

Second, installing a **formal governance model enables meaningful public participation in the policy process on an on-going basis**, as seen in Belo Horizonte and Golden Horseshoe. The latter shows that it is helpful to draw up rules of engagement that hold members to account over regular participation -- and provide mechanisms for those who do not turn up. On the other hand, Detroit serves as a caveat that one-off consultations or failure to establish a participatory governance structure can impede implementation and policy renewal.

Third, the ensure representation of all those whose presence is desirable, it is helpful to **conduct an 'inventory' of key people and organizations to invite to the table**, as was done in the case of Golden Horseshoe. In order to engage these key actors, experiences in Golden Horseshoe and Detroit show the utility of instigating actors **drawing on their own professional networks and contacts**.

Fourth, where direct participate by some sectors or community groups is not possible (often farmers, small businesses, or poor and disenfranchised people), **working through representative organizations or community groups** can enable their interests to be represented. This was seen in Golden Horseshoe and in Amsterdam.

Fifth, experiences in Nairobi and Amsterdam demonstrate that **empowering marginalised and disenfranchised groups** can enable them to have a say over policy that directly affects their interests. By becoming organised, they can have a louder, more powerful voice than they would have as individuals.

Sixth, it may be necessary to **adapt the policy process to enable the participation of people from all relevant sectors and community groups**, as occurred in the cases of Golden Horseshoe and Detroit where some groups were excluded from usual processes or risked censure if they participated openly.

## References

- Calori, A. & Magarini, A., 2015. Food and the Cities: Food policies for sustainable cities. Milan: Edizioni Ambiente.
- Centre for a Livable Future, 2015. Food policy council directory, 2015 Update [PowerPoint slides]. Johns Hopkins University. URL [https://assets.jhsph.edu/clf/mod\\_clfResource/doc/FPC\\_Trends\\_Slides\\_2015\\_10\\_28.pdf](https://assets.jhsph.edu/clf/mod_clfResource/doc/FPC_Trends_Slides_2015_10_28.pdf) (accessed 20.9.2016).
- Deakin, M., Borrelli, N., Diamantini, D., 2016. The Governance of City Food Systems: Case Studies From Around the World , in: Deakin, M. Borrelli, N. Diamantini, D. (Eds.). Milan: Fondazione Giangiacomo Feltrinelli
- De Zeeuw, H., & Dubbeling, M., 2015. Process and tools for multi-stakeholder planning of the urban agro-food system. In H. de Zeeuw & P. Drechsel (Eds.), Cities and Agriculture - Developing Resilient Urban Food Systems. Reuters.
- Derkzen, P., & Morgan, K., 2012. Food and the city: the challenge of urban food governance. In A. Viljoen & J. S. C. Wiskerke (Eds.), Sustainable food planning: evolving theory and practice. Wageningen: Wageningen Academic Publishers.
- Forster, T., Egal, F., Getz Escuerdo, A., Dubbeling, M., Renting, H., 2015. Milan Urban Food Policy Pact. Selected Good Practices from Cities, Utopie/29 Globalizzazione. Milan: Fondazione Giangiacomo Feltrinelli.
- IPES-Food, 2017. What makes urban food policy happen? Ingredients for change. Policy report 2017, International Panel of Experts on Sustainable Food.
- Pinstrup-Andersen, P., 1993. Political Economy of Food & Nutrition Policies, Washington D.C.: International Development Research Centre, p302.
- Jégou, F., Carey, J., 2015. Creating space for sustainable food systems in urban communities: practical approaches and examples for cities. Based on experiences from URBACT II Thematic network Sustainable Food in Urban Communities (2012-2015), Strategic Design Scenarios Publishing.
- Moragues-Faus, A., Morgan, K., Moschitz, H., Neimane, I., Nilsson, H., Pinto, M., Rohrer, H., Ruiz, R., Thuswald, M., Tisenkopfs, T., Halliday, J., 2013.
- Urban Food Strategies: The Rough Guide to Sustainable Food, Document developed in the framework of the FP7 project FOODLINKS (GA No. 265287). URL [http://www.foodlinkscommunity.net/fileadmin/documents\\_organicresearch/foodlinks/publications/Urban\\_food\\_strategies.pdf](http://www.foodlinkscommunity.net/fileadmin/documents_organicresearch/foodlinks/publications/Urban_food_strategies.pdf) (accessed 28.2.2017).
- Schiff, R., 2008. The Role of Food Policy Councils in Developing Sustainable Food Systems. Journal of Hunger and Environmental Nutrition, 3(2-3), 206–228.
- Shiffman, B.J., Smith, S., Hall, E., 2007. Generation of Political Priority for Global Health Initiatives : A Framework and Case Study of Maternal Mortality. The Lancet, 370(9595), pp.1370–1379.
- Wekerle, G. R., 2004. Food Justice Movements: Policy, Planning, and Networks. Journal of Planning Education and Research, 23(4), 378–386.

# The role of planning in shaping better urban-rural relationships in Bristol City Region

Luca Lazzarini

PhD Student in Urban and Regional Development, DIST/Politecnico di Torino

---

**Keywords:** city region, green belt, rural-urban relationship, LEP, Bristol

---

## 1. Sub-Regional Governance after Localism in British Cities

Over the last 30 years, the majority of the Western Countries have experienced a decentralization of powers from central governments to a wide range of different sub-central state entities, institutions, partnerships and agencies. In United Kingdom, the path to decentralization has followed a chaotic and unclear direction for the ambiguous impacts of the policy reforms (Williams et al., 2014) and for the continuous shifts in the perception of the government and other agencies towards the cities, the regions and city-regions (Tewdwr-Jones, 2012). The White Paper Local Growth: realising every place's potential published in 2010 has been interpreted as a pivotal step in the English devolution for the impacts of the changes it has produced in the architecture of governance. The Paper has provided a road-map for Government's ambition of rebalancing UK economy, particularly by devolving economic and social responsibilities down to cities and local communities (HM Government, 2010; Pugalis and Townsend, 2012).

Alongside the shift of powers to the local level, the emphasis on self-determining local priorities and on driving local businesses towards economic growth has led the emergence of a new sub-regional arrangement, the Local Enterprise Partnership (LEP). LEPs are joint local authority-business bodies aimed at improving the coordination of public and private investments in transport, housing, skills, regeneration and other areas of economic development (Tallon, 2013). Already interpreted as an expression of the move between Managerial and Entrepreneurial mode of governance that British cities have been facing in the last two decades (Harvey, 1989; Shaw and Tewdwr-Jones, 2016), LEPs underline local governments' shift from the management of public services towards the promotion of economic competitiveness. Given their potential to steer the broad complex of spatial interactions, LEPs have been conceived as a mechanism for enabling collaboration across traditional boundaries (Pugalis and Townsend, 2012).

Alongside this framework, during the last two decades in British local governments' field of action has been growingly influenced and oriented by sustainable development principles (Giradet, 2003; Pacione, 2009). In UK cities, the debate on sustainability has encountered the deep challenges of the urban regeneration agenda, often linked to a predominant trend towards brownfield redevelopment (Tallon, 2013; Couch et al., 2000). The 'green paradigm' that many local authorities have openly embraced has contributed to shape a plethora of local plans and strategies, with a crucial influence, particularly in the environmental sphere, played by the EU in shaping their contents (Cowell, 2017). Hence, principles of environmental sustainability have conveyed an overall improvement in the quality of life of many urban communities particularly by using more efficiently land and resources, protecting ecosystems and biodiversity and promoting sustainable consumption and production patterns (UN, 2016; Tallon, 2013).

The relevance of this for the current era of Devolution in UK is that the reorganization of sub-regional governance following 2010 has pushed cities to re-frame their relationships with rural hinterlands and to reconnect with their nearby countryside (Gallent et al., 2006). Here it is argued that one of the main forces fostering the reframing of urban policies toward a more consistent relationship with the rural hinterland is the emerging consideration of food and urban agriculture in the agenda of a relevant number of British cities (Morgan, 2009. See also: Reed et al., 2013).

Despite these emerging trends, concerns arise when the success of local food initiatives in terms of health impacts and local civic engagement conflicts with the current sectoral fragmentation that characterizes the policies dealing with food, and with the interests of developers pushing for the release of green land for new developments (Butterly & Fitzpatrick, 2017). As Sinden (2017) correctly pointed out, the 'Land Question' that many British cities are facing is related on one hand to the challenges associated with providing homes for people, and on the other hand with the production of food and the provision of other natural resources. In this sense, Green Belts are often seen as the places where the

debate on land management finds its most crucial expression (Gallent et al., 2006; Helm, 2015). This is mainly due to the growing scarcity of land free from planning restrictions situated in proximity of cities to be used for new developments, and to a rooted assumption regarding the scarce overall amenity value of Green Belts (Neate, 2014; Smith, 2001).

The purpose of this paper is to analyse the planning policies at the city-regional level dealing with and affecting rural areas in a context of a British city region. The paper is organized in three sections. In the first section, the case study is presented. The activity of the West of England Local Enterprise Partnership (WoE LEP) in planning is discussed in the second section with an emphasis on the WoE Joint Spatial Plan (JSP) and its impacts on the preservation and development of rural areas. The third paragraph offers an alternative paradigm for planning to overcome the issues previously identified and to proactively shape a different relationship between cities and their rural hinterlands.

## **2. Bristol City Region: In Search of a More Effective Agri-Food Policy Engagement**

Bristol is the main city of the South West of England and the 8th largest city in England, with a population of almost 450.000 inhabitants. As a major seaport, Bristol has a long history of global trading commodities. Nowadays city's economy is mostly reliant on aerospace technology, creative industries, media, financial services and tourism.

In the last ten years, Bristol has gained a 'green appeal' both at national and international level. This is witnessed by the recent 2015 European Green Capital award and by a growing number of environmental organizations and enterprises operating in the private, public and voluntary sectors. City's 'green appeal' has also recently been associated with the increasing importance of food businesses in local economy (Carey, 2011) and by the many local food growing initiatives active in Bristol and within its rural hinterland (Raffle & Carey, 2017). Raising the awareness towards more sustainable consumer practices, providing alternative food chains to the dominant food systems and combining the production of local food with the development of a social community are some of the main goals of Bristol food initiatives (Reed & Keech, 2015).

Citizens' activism has been influential in several ways, also with respect to the policy engagement of the City Council (Ibid.). Although in UK local governments have limited direct powers over food and farming policy (Morgan 2009), the case of Bristol supports the idea that civic initiatives can relevantly influence the food policy agenda (Raffle and Carey, 2017). In this sense, the formation of the Bristol Food Network (BFN) in 2009 and of the Bristol Food Policy Council (BFPC) in 2011, both with members drawn from key sectors including health, business, grassroots, non-governmental organizations, education and local government, have helped to create a systemic sustainable food approach in the city and to significantly influence local policy making processes.

2011 is also the year when the report "Who Feeds Bristol? Towards a resilient food plan" (Carey, 2011) was published. The report sheds the light on the importance of food for local economy, by highlighting that one in ten jobs in the West of England are related to food and drink (Ibid.).

The policy influence of the BFPC has brought to important results over the last two years, particularly in 2015 with the publication of the Bristol's 'Good Food Action Plan' and with its responses to local planning consultations. The Plan has helped the city to achieve beneficial change to the food system by describing actions to be carried on over the next two to three years. It has been written with the active involvement of a number of people and organizations that have added their own plans through blank templates. Also, the Bristol City Council contributed to the Plan by updating the final version of the document in December 2015.

Despite the number and maturity of local food initiatives, Bristol City Council has not an adopted Local Food Strategy yet. Moreover, food is not part of the "Green Infrastructure Strategy" adopted by the Council in late 2008 (BCC, 2008).

From the institutional point of view, Bristol City Region corresponds to the administrative space of four local authorities: Bristol, North Somerset, South Gloucestershire and Bath & North-East Somerset. These are jointly participating to the activity of the West of England Local Enterprise Partnership (WoE LEP). one of the first LEPs to be endorsed by the Government in the "White Paper" (Tallon, 2013).

In 2012, the creation of a "Public Sector Procurement Group", involving 14 organizations in the West of England, has led to sharing of good practices and bringing together procurement officers, caterers,

suppliers and other decision makers to achieve a major shift in public sector food procurement policies. Moreover, the recent establishment of a “Rural and Food Economy” sub-group in the WoE LEP and its official recognition in the WoE Strategic Economic Plan (WoE LEP, 2013) has been interpreted as a first step towards the recognition of the vital role of farming industries and of the diversity of food businesses for City-Region economy (Raffle and Carey, 2017). Nevertheless, concerns arise when looking at the agri-food businesses involved in the sub-group. In fact, just few large-scale and influential food businesses are currently part of the group, with no representation of small and medium scale local food producers and processors, alternative to the industrial model of farming (WoE LEP, 2013).

### **3. Investigating LEP’s planning policies in Bristol City Region**

Planning policies in Bristol City Region have been investigated through a survey, done in early 2017, addressed to analyse LEP’s activity in planning. The main goal of the survey has been to study to which extent LEP’s planning deals with and affects rural areas, particularly those within the Green Belt designation. The survey has been followed by a number of semi-structured interviews carried out from March to June 2017 and addressed to local actors, involved in different ways in planning processes and in food activism. At the focus of the analysis there was the West of England Joint Spatial Plan (JSP), which has been implemented by the four local authorities within the LEP to guide the future growth of the City Region.

The JSP has been studied in order to understand to which extent it affects the Green Belt and, ultimately, the relationship that Bristol establishes with its rural hinterland. The Plan will be adopted in 2018 and it is currently undergoing its policy development. With its emphasis on addressing the social and economic growth of the region, JSP main focus is on setting out the most appropriate spatial strategy and strategic locations for where the housing growth should be met in the West of England.

The JSP has been undergoing two consultation phases, the first in Autumn/Winter 2015 and the second in Autumn 2016. During the second consultation phase, over 1,500 people representing a range of residents, businesses and other stakeholders responded to the draft proposal, giving their opinions on the preferred spatial strategy among the five proposed scenarios comprising a wide range of options with reference to Strategic Development Locations (SDL). The five spatial scenarios proposed were the protection of Green Belt (i), the concentration at Bristol urban area (ii), the transport focus (iii), a “more even spread development across the region” (iv) and “new settlements or a limited number of expanded settlements” (v). The majority of responses outlined the scenario referring to the protection of Green Belt (61% over a total of 531 responses) with most of them (60 up to 110) specifically claiming that Green Belt land should be used to locate new housing.

Looking at the final strategy adopted by the plan, 105.000 new homes to be built in the West of England up to 2036 are foreseen, 30% of which affordable. Of this amount, 66.000 homes are already planned in the Core Strategies of the four local authorities and 39.000 have still to be planned (WoE, 2017). Despite the results of the consultation phase and the spatial scenario chosen by the majority of respondents, the final strategy endorsed by the plan foresees 9.000 locations within or partially within the Green Belt.

As stated by the interviewed local councillors, in the past LEP’s meetings local authorities were calling for a softening of Green Belt policy through a release of a consistent part of its land. Accordingly, by locating developments within Green Belt, the Plan seems to be the product of these local requests.

JSP’s emphasis on locating developments across the City-Region discloses the plan’s overlook to the rural hinterland and, more in general, to the countryside. Some of the interviewed local councillors stated that this limit is justified by the plan’s emphasis on addressing the housing and transport needs of the region and on identifying the strategic locations for housing developments. As noticed by CPRE (2016), the JSP cuts down rural areas from its strategic focus excluding them from the joint planning policies. In this sense, the active contribution of the countryside to the liveability of city region’s communities in terms of providing spaces for recreation and of maintaining people’s health and wellbeing is not taken into consideration by the plan.

Accordingly, LEPs’ identification as economic leadership groupings supporting investments in strategic sectors for local economy is leaving apart all what considered as ‘non-strategic’. Given their role as relevant players in statutory planning processes, problems arise when LEPs fail to include the

contribution of the countryside within the strategic visions for the social and economic development of the City Region.

LEP's role in spatial planning and cross-boundary issues raises a further issue of interest. According to Pugalís and Townsend (2012), when LEPs take a formal role in statutory planning process, it is probable that significant tensions will arise between the needs of businesses and of democratic accountability. In the West of England, the problem of accountability is raised by the crucial role played by the Local Enterprise Partnership in dealing with spatial planning at city regional level. In this sense, the identification by JSP of a relevant number of Strategic Development Locations, some of which within Green Belt areas, will meaningfully affect the future of the City-Region in the next 30 years. This choice will produce also strong consequences in the local plans of the four local authorities of the region and in the planning making processes at the local level.

#### **4. Shaping Better Relationships between Bristol and its Rural Hinterland**

The findings of this study suggest that the Localist Agenda has been relevant in increasing the power that local councils have in spatial planning, also and especially through their work in the Local Enterprise Partnerships at city regional level. Therefore, crucial decisions such as which land to use for housing developments, where to locate new homes across the city region or, more in general, how to plan or even 'non plan' the rural hinterland reveal a precise idea of urban-rural relationships that the local authorities are conveying through their policies.

Here it is argued that one of the possibilities to support a more positive contribution of rural areas within planning processes is to turn the inertia of Green Belts into a more proactive role towards cities, particularly by conceiving Green Belts as farming resources more closely linked to city's uses and demands (Butterly et al., 2017). This would contribute to reshape the functional and spatial links between the city and its rural hinterland and to improve the overall sustainability of city region food system. Therefore, this approach interprets Green Belts as places where planning should take a more detailed and accurate look to the quality of land when identifying land use changes.

Hence it is proposed that planning should overcome the rigid land-use mechanism and the 'urban-focus' of its policies to embrace a more positive and integrated approach to the countryside, especially to the countryside closer to cities and within Green Belt borders. The way for planning to do that is to approach to rural land management in a more proactive way, for example by protecting the most versatile local food growing areas, by mediating the land-use and functional conflicts and by setting out a set of positive policies for the development of rural hinterlands. These policies should deliver a more sustainable vision of Green Belts as places where the benefits of agricultural land are shared with local communities towards better addressing the vulnerability of the local food system.

Given the fragmented institutional landscape and the multifaceted governance arrangements characterizing the periurban interface (Calafati, 2009. See also: Vandermeulen et al., 2005), the city-regional level is interpreted as the most appropriate level for implementing the above mentioned set of policies. This is also supporting a recent trend in rural geography that has brought to conceptualize the functional agri-food relations in city-regions (Van Veenhuizen 2006).

Despite this, doubts still persist when considering the internal fragmentation and the complex and asymmetric cooperative patterns connoting the sub-regional level. Moreover, the confusing and at worst chaotic approach adopted since 2010 is not fully taking advantage of the policy potentials of the city-regional level in raising the sustainability of metropolitan areas (Shaw and Tewdwr-Jones, 2016). Accordingly, the role of LEP (as it currently is) seems inadequate to achieve this change.

Alongside LEP's important deficit in recognizing the contribution of the countryside to the social, environmental and economic development of the city region, the experience of the Bristol Food Policy Council has shown how a non governmental initiative can introduce substantial changes in the policy agenda of local authorities. In the last ten years, the planning and policy focus of the BFPC and its active involvement in the local food arena have guided town planning towards a better acknowledgement of food system into local policy processes.

Following this view, at the city regional level a better representation of non institutional actors, particularly food enterprises, in the activity of LEP could set the conditions for reframing planning policies towards a better consideration of food system. A more qualified demand coming from the local

food economy could introduce some changes in the priorities of LEP and in its range of action. Thus, LEP would be interpreted as the most suitable level to promote a city regional agri-food strategy only if its administrative and business focus was reshaped towards a more substantial representation of food economy into its structure. Food businesses have the potential to remodel LEP's strategic focus towards considering agriculture and food not as marginal economic assets but as pivotal factors in developing sustainable improvements in the urban-rural continuum.

## References

- Bristol City Council (2008), Parks and Green Space Strategy, Bristol City Council (available from: <https://www.bristol.gov.uk/policies-plans-strategies/bristol-parks-and-green-space-strategy>)
- Butterly, D. & Fitzpatrick, I., eds. (2017), A People's Food Policy, Transforming our food systems (available from: [www.peoplesfoodpolicy.org](http://www.peoplesfoodpolicy.org))
- Calafati, A. (2009), *Economie in cerca di città*, Roma: Carocci;
- Carey, J. (2011), *Who Feeds Bristol? Towards a resilient food plan*, Bristol: Bristol Green Capital, NHS Bristol, Bristol City Council;
- Couch, C., Dennemann, A. (2000), Urban regeneration and sustainable development in Britain: the example of the Liverpool Ropewalks Partnership, *Cities* 17, pp. 137-147;
- Cowell, R. (2017), The EU Referendum, planning and the environment: Where now for the UK, *Town Planning Review*, 88 (2);
- CPRE (2016), *Green Belt Under Siege: 2016* (report available from: <http://www.cpre.org.uk/resources/housing-and-planning/green-belts/item/4276-green-belt-under-siege-2016>)
- Gallent, N., Bianconi, M., Andersson, J. (2006), Planning on the edge: England's rural-urban fringe and the spatial planning agenda, *Environment and Planning B: Planning and Design*, 33, pp. 457-476;
- Giradet, H. (2004), *Cities, People, Planet: Liveable Cities for a Sustainable World*, Chichester: Wiley Academy;
- Harvey, D. (1989), From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism. In: *Geografiska Annaler, Series B, Human Geography*, 71(1), pp. 3-17;
- Helm, D. (2015), In defence of Green Belt (paper presented at the seminar 'Green Belt of the Future', 16 February 2017, GLA building, London);
- HM Government (2010), *Local Growth: realizing every place's potential*, London: The Stationary Office;
- Morgan, K. (2009), Feeding the City: The Challenge of Urban Food Planning, *International Planning Studies* 14:4, pp. 341-348;
- Neate, S. (2014), Ministers must review green belts, *Planning*, number 1988, p. 12;
- Pacione, M. (2009), *Urban Geography: A Global Perspective*, London: Routledge (3rd Edition);
- Pugalis, L. & Townsend, A.R. (2012), Rebalancing England: Sub-National Development (Once Again) at the Crossroads, *Urban Research & Practice*, 5(1), pp. 159-176;
- Raffle, A., Carey, J. (2017), Grassroots activism, agroecology and the food and farming movement; ten years in one city's food story – Bristol, England. In: *Routledge Handbook of Landscape and Food*, London: Routledge;
- Reed, M., Curry, N., Keech, D., Kirwan, J. and Maye, D. (2013), City-region report synthesis, Work package 2 / Deliverable 2.3, SUPURBFOOD, Seventh Framework Programme of the European Community;
- Reed, M. & Keech, D. (2015), Building a Bristol Food City Region from the Grass Roots up: Food strategies, action plans and food policy councils, *Urban Agriculture magazine* 29;
- Shaw, K. & Tewdwr-Jones, M. (2016), "Disorganised Devolution": Reshaping Metropolitan Governance in England in a Period of Austerity, *Raumforsch Raumordn*, pp. 1-14;
- Sinden, N. (2017), Land use: an overview. In: CPRE (ed.), *Landlines. Why we need a strategic approach to land*;
- Smith, N. (2001), Green Belt policy in need of update for public spaces, *Planning* number 1419, p.7;
- Tallon, A. (2013), *Urban Regeneration in the UK*, London & New York: Routledge;
- Tewdwr-Jones, M. (2012), *Spatial Planning and Governance: Understanding UK Planning*, Houndmills: Basingstoke;
- United Nations (2016), *Habitat III. New Urban Agenda*, Quito, 10 September 2016 (available from: [http://citiscope.org/sites/default/files/h3/Habitat\\_III\\_New\\_Urban\\_Agenda\\_10\\_September\\_2016.pdf](http://citiscope.org/sites/default/files/h3/Habitat_III_New_Urban_Agenda_10_September_2016.pdf))
- Vandermeulen, V., Verspecht, A., Van Huylenbroeck, G., Meert, H., Boulanger, A., Van Hecke, E. (2006), The importance of the institutional environment on multifunctional farming systems in the peri-urban area of Brussels, *Land Use Policy* 23 (2006), pp. 486–501;

Van Veenhuizen, R. (2006), *Cities farming for the future: Urban agriculture for green and productive cities*, Leusden: RUAF Foundation;

West of England LEP (2013), *Strategic Economic Plan. Sector Prospectus*;

West of England LEP (2017), *Joint Spatial Plan and Transport Study. Consultation report 2017*, Bristol, South Gloucestershire, North Somerset, Bath & North East Somerset;

Williams, A., Cloke, P., Thomas, S. (2012), Co-constituting neoliberalism: faith-based organizations, co-option, and resistance in the UK, *Environment and Planning A* 44, pp. 1479–1501.

---



# The challenge of land accessibility for Urban Agriculture. A Hybrid Governance Approach on the Brussels' case.

Alessandra Manganelli

---

**Keywords:** Hybrid Governance, Governance Tensions, land accessibility, Urban Agriculture.

---

## Abstract:

*Enabling urban agriculture and Local Food Networks in urban and peri-urban areas is a real challenge. Serious constraints relate to the access and use of land and related resources for urban agriculture: scarcity of quality land, urban development pressures, unfavorable planning systems, administrative fragmentation, etc, pose huge barriers to the enablement of urban agriculture.*

*Land being an essential and yet very contended resource, it becomes essential to sort out the ways access, distribution and fair use of land for urban agriculture are actually governed. To address that, this article capitalizes from recent theoretical and empirical work on the hybrid governance of alternative food networks (Manganelli and Moulaert 2017a, 2017b – in preparation). The hybrid governance approach identifies interrelated governance tensions among organizational, resource and institutional aspects, showing how these tensions condition the governance and the overall development of urban agriculture and alternative food networks. Having addressed organizational governance tensions in a previous work on the Brussels' GASAP consumers-producers' network, this article focuses on land-resource aspects, as primary sources of organizational and institutional governance tensions in the development of urban agriculture and local food networks.*

*The hybrid framework is applied to a case study – the Boeren Brussel Paysans (BBP) project – conceived to implement urban agriculture and local food networks in a peri-urban area of the Brussels-Capital Region (BCR) called Neerpede. Urban expansion as well as institutional complexity, due to the proximity with the Flemish Region, add on the land governance pressures to protect agriculture and develop local food networks in this area. The analysis of the BBP actor's network also shows how accessing and using land for urban agriculture is becoming a sensitive and contentious governance issue not only at the local, but also at the Regional and, potentially, interregional scales.*

## 1. Introduction

Securing access and fair use of land and related resources (e.g. physical infrastructures, funding, labor, UA's produce) is a very sensitive and contentious matter for urban and peri-urban agriculture initiatives. This paper focuses on access to land. As the local food movement develops, struggles for accessing and securing land do not diminish. On the contrary, serious obstacles and dilemmas related to accessing land resources and their use keep threatening the life of local food initiatives (Cohen and Reynolds 2014; Angotti 2015). This has considerable impacts on the development of sustainable urban agriculture, as well as on the actual values and benefits of urban agriculture practices for local communities (Reynolds 2015; Tornaghi 2014, 2017).

Practical experiences as well as scientific contributions point to significant pressures and constraints on the land-resource(s) access and use. Urban agriculture practices in urban and peri-urban areas are first of all subject to strong urbanization pressures (Darly and Torre 2012; Aubry and Kebir 2013). Land speculation by real estate or other agents (Condon et al 2010), high land values (Angotti 2015), competition over the use of land (Prové et al. 2016) create considerable obstacles to the development of human scale agriculture and local food networks in urban areas. Established planning systems and land use regulations in general do not foster alternative land use practices such as agro-ecological food production, or different forms of urban and peri-urban agriculture (Thibert 2012; Tornaghi 2014; Prové et al. 2016). Other challenges to the development of (peri)urban sustainable agriculture concern legal and material aspects related to land-resource access and use, such as land contamination (Kim et al. 2014), or the ownership and the right to use land and other material resources (De Schutter 2010; Borrás et al. 2015; Follmann and Viehoff 2015; Wekerle and Classens 2015).

Overall, factors such as path-dependent planning and administrative practices, as well as contrasting cultures and visions over the use of land and other resources, have a considerable impact on the

development of urban agriculture, as well as on its governance. These aspects should not be overlooked if urban agriculture and local food networks aim to contribute significantly to the local food security and sovereignty (Tornaghi 2014, 2017). In other words, it is arguable that claims and actions to increase local food access or reach a better food sovereignty are hardly achievable without carefully reflecting on the land-resource question and how it is governed (De Schutter 2010; Borras *et al.* 2015; McMichael 2015). Acknowledging these challenges, this article focuses on the ways the use of land and related resources and the fair access to them are actually governed. Use is made of a conceptual framework on the hybrid governance. This framework (developed in Manganelli and Moulaert 2017a, 2017b in preparation) shines light on interrelated resource, organizational, and institutional governance tensions, conditioning access and use of land for urban agriculture. Hybrid governance is analyzed theoretically but also applied to an empirical case study.

The selected case study is a peri-urban agriculture project and actors' network, called Boeren Brussel Paysans (BBP). This project has developed as a consortium or coalition of diverse actors, from bottom-up advocacy organizations, to institutional actors, around the implementation and enhancement of urban-peri-urban agriculture and local food networks. The BBP has implemented small scale agro-ecological agriculture in a peri-urban area of the Brussels-Capital Region (BCR), called Neerpede (Municipality of Anderlecht – BCR). However, searching for accessible land in the whole Brussels Region is also part of the project's objectives. Thus, an intention to scale out access to land for urban agriculture is observable. In addition, further scalar dynamics relate to the connection with the neighboring Flemish Region. In the view of the project's partners as well as of key Brussels' institutional actors that bordering Region has the greatest potentials to contribute to the Brussels' food security. How to bring the land question to this wider spatial scale is, however, still an open question. The multi-layered and fragmented administrative and planning systems in the BCR as well as in the Flemish periphery (Messely *et al.* 2010; Messely 2014) do not help to achieve shared visions and actions on the land-resource access for urban and peri-urban agriculture.

Thus, for the above reasons this case study clearly shows the sensitivity of the land question and its governance. It shines light on critical scalar dynamics and tensions related to the enhancement of urban agriculture and local food networks<sup>1</sup>.

While section 2, following this introduction, gives a conceptual and methodological explanation of the hybrid governance approach, section 3 applies the framework to the case study analysis. By combining diverse governance theories, the hybrid framework conceptualizes access to the land-resource(s) as connected to both, organizational as well as institutional governance dynamics and tensions. This gives structure to the empirical analysis, which looks at the interconnectivity among agential, organizational and institutional dynamics related to the land-resource(s) governance in the specific case of the Brussels-BBP. Thus *section 3.1* looks at how the BBP organization developed through actors' mobilization, as well as divergent claims and contradictions, around land protection and access to land and resources for urban agriculture. *Section 3.2.* then digs into the key tensions on the governance of the access to land for urban agriculture in Brussels, as they are experienced by the BBP coalition and by other actors. *Section 3.3.* looks at the ways Brussels' institutions are responding to the land-resource challenges, partially in dialogue with claims and values emerging from the BBP actors' network. The last section (section 4) summarizes the key learnings for a more sustainable governance of the land-resource for the Brussels' institutions and other key agents.

## **2. The conceptual framework and the methodology**

This section explains the conceptual-methodological framework adopted to carry out the empirical analysis. The methodology makes use of empirical categories, derived from the interactions between empirical insights and conceptual work (see below). Thus, the ways these categories informed the empirical investigation on the BBP case is specified. This section also explains the practical methods of data collection adopted in the analysis.

---

<sup>1</sup> Concerning scale and scalar processes, we refer to governance and human geography traditions that understand scale in a relational and dynamic way, rather than in a simply static and hierarchical manner. See for instance Jonas (2006), referring to scale reconfiguration through strategic actions and narratives. See also Swingedouw and Heynen 2003; or Swingedouw 2004

The hybrid governance concept, developed in Manganelli and Moulaert 2017a, 2017b – in preparation, casts light on critical tensions affecting the governance of urban agriculture and alternative food networks. These tensions are summarized analytically in terms of organizational, resource and institutional governance tensions (*ibid*). The interrelation among these tensions is also considered in the hybrid governance analysis. The framework draws on different governance literatures: social innovation and collective action perspectives (Moulaert et al. 2005, 2007, Della Porta and Diani 2006), political economy and ecology approaches to governance (Swyngedouw and Heynen 2003; Swyngedouw and Kaika 2014; Classens 2015; Tornaghi 2017), sociological-institutional and multi-scalar governance perspectives (Jessop 2002, Moulaert et al. 2005, 2013, Healey 2006, Swyngedouw and Jessop 2006), as well as relational approaches to governance (Allen 2009, Allen and Cochrane 2010, Jessop 2002, Swyngedouw and Jessop 2006). These theoretical perspectives help to conceptualize the real-life governance dynamics of local food networks, as these initiatives need to cope with a number of tensions and struggles to build alliances, networks and coalitions, often with the purpose to increase access to resources and/or to have a greater voice and impact on the organization of local food systems. Clashes inevitably occur among diverse cultures, values and professional practices of key agents, organizations and institutions of the local food and institutional environments. Also focusing on the interrelations among the three types of tensions, the hybrid governance approach offers a way to disaggregate these dynamics and to understand the ways they may hamper or foster a sustainable governance of local food systems.

Building on the above, this paper addresses the interconnected governance tensions starting from the land-resource challenge. Accessing and using land for urban agriculture are major sources of governance tensions. Organizational governance mainly relates to actors' organization, movement or coalition building in order to acquire, negotiate and secure the access and use of land and other resources (Block et al. 2012, Wekerle and Classens 2015). Urban agriculture advocates may enter into tension with other agents, organizations as well as institutional structures which have an impact on the ways access and use of land are practically enacted, controlled and regulated (Borras *et al.* 2015). This connects to institutional governance tensions, which refer to the role of diverse institutional cultures, institutional practices and processes, regulatory and power structures in affecting access to land for urban agriculture. The right to use land and the (more or less) fair allocation of the land-resource are also part of these institutional governance tensions.

The conceptual framework is empirically informed by the analysis of the BBP's case study. The BBPs and the wider land accessibility challenges for urban agriculture in Brussels, clearly cover all the important aspects of the land governance tensions: i.e. material and legal constraints over the use of land, agential and organizational dynamics, such as the building of actor's networks and coalitions, institutional-administrative fragmentation as well as scalar challenges to address the land questions. Thus, empirical categories were identified and fine-tuned with the insights from the case study analysis. These categories - presented in the scheme below (scheme 1) - cast light on 'factors of tensions' - i.e. the factors instigating hybrid governance tensions - and 'nature of tensions' - the ways governance tensions practically manifest. 'Factors' and 'nature' of tensions were defined through several steps during the field-work, confronting initial assumptions with preliminary and intermediate results from the empirical investigation. This has allowed to bring the categories more in tune with the specificity of the case. Furthermore, a last column of Scheme 1 - titled 'ways of improvements' - provides suggestions to improve the governance of the land accessibility towards more sustainable directions on the basis of the observed hybrid governance tensions (see section 4).

Proximity of the authors with Brussels' local food actors and policy dynamics allowed to follow the project throughout its development, up to the current stage. A first round of data collection was carried out between September 2016 and February 2017, whereas a second round was accomplished in September-October 2017. This allowed to refine the analysis and follow up on the recent stages of the project.

Multiple qualitative methods were used for the empirical investigation. In-depth face-to-face interviews were carried out with every partner of the BBP's coalition. Interviews have also addressed public officials from both, the Municipality of Anderlecht (planning and sustainable development divisions) as well as the BCR (administrations of planning and environment). Key actors and informers from the Flemish Region have been also interviewed: three employees of the Flemish Land Management Agency

VLM (Vlaamse Landmaatschappij) and an independent practitioner and researcher from the University of Gent. These actors are knowledgeable about or personally involved in the support of small-scale locally oriented agriculture and local food networks in the Brussels' hinterland. They provided valuable insights on the administrative and policy dynamics of Flanders and Brussels and the challenges to develop collaborations between the two Regions. Furthermore, participatory observations in the site of implemented urban agriculture plots in the Neerpede area, allowed to hear the voice of few representative producers supported by the BBP's coalition.

Further methods of empirical investigation concerned the study of the local-regional administrative and land use systems, to understand their impact on the preservation-development of land for urban and peri-urban agriculture. This was achieved by the means of web-site and document analysis of zoning regulations, other key planning documents, surveys and policy briefs, as well as secondary literature analysis. Finally, the tutoring of a master thesis about urban and peri-urban agriculture in Neerpede allowed to deepen the overall understanding of the physical characters as well as the institutional dynamics of this area.

### **Section 3 - Hybrid governance tensions in accessing and using land for urban agriculture in Brussels. The Neerpede-BBP case.**

This section, divided in 3 subsections makes use of the hybrid governance methodology to tackle the empirical case study. A first subsection retraces the ways the BBP's began to form and developed as a consortium of actors. Organizational governance tensions affecting the partnership's formation and development are highlighted. A second subsection digs into the governance tensions to scale out land accessibility for urban agriculture in Brussels. To complement the analysis, the third paragraph depicts the type of responses to the land question as they emerge, with some ambiguities, from Brussels' institutions. To highlight the ways hybrid governance tensions manifest, direct reference is made to the hybrid governance categories presented in Scheme 1.

**Scheme 1 – Hybrid Governance Categories.**

Type of Governance Tension	Factors of Tension	Nature of the Tensions	Ways of improvement
<b>RESOURCE</b>  Tensions in the governance of the access to and use of land and other key resources (funding, physical infrastructures, food,...)	<i>Perceptions and tensions around the availability, quality, and use of the land resource</i>	<p><b>Searching access to and control of land</b> and key material resources fostering diverse governance dynamics, responses, conflicts</p> <p>Tensions between <b>diverse visions and logics of land allocation</b> (e.g. efficiency vs solidarity, market vs 'commoning', public vs private) as expressed by a diversity of actors (state, corporate, communities, organizations)</p> <p>Challenges related to <b>legal and material aspects over land</b> (e.g. land quality, property, right to use)</p>	<p><b>Giving support to key organizations which can help to coordinate land demand and supply</b></p> <p><b>Working on alternative land use contracts</b></p> <p><b>Sensitizing and partnering with a diversity of actors</b> (e.g. land owners, planning and territorial management actors), influencing the access and use of land for urban agriculture</p>
<b>ORGANIZATIONAL</b>  Tensions and struggles in urban agriculture's organizations as for their will to access and use land	<i>Diverse agents and organizations mobilizing/competing for the access and control of the land resource.</i>	<p><b>Interactions bottom-up food networks top-down state/corporate systems</b> for negotiating/ claiming access/control of the land resource</p> <p><b>Coalition building</b> at different spatial and institutional scales to increase the access and use of land</p> <p><b>Tensions in principles, behaviours, identities</b> among organizations</p> <p><b>Strategic leadership</b>, forms of proactive conflict management and <b>cooperation</b></p> <p><b>(Dis)enabling organizational arrangements</b> affecting the capacity to access land</p>	<p><b>Cultivating relational proximity among actors and giving incentives to the formation of targeted coalitions or actors' networks</b> (sustainable in timeframe and resources)</p>
<b>INSTITUTIONAL</b>  Tensions in the socio-political and socio-professional governance structures embedding the governance of urban agriculture.	<p><i>Institutional and regulatory structures interfering with the allocation of land and related resources</i></p> <p><i>Power struggles between UA's advocates and state/corporate institutions at different scales</i></p> <p><i>Divergent values, behavioural routines, agendas among agents, organizations, institutions (state, corporate)</i></p>	<p><b>Constraining vs. enabling multi-level regulatory structures</b> (e.g. planning systems or funding regulations) with respect to the allocation and use of the land resource</p> <p><b>Hybrid actors' and policy networks negotiating</b> supportive policy/institutional spaces</p> <p><b>Socio-political transformative forces</b></p> <p><b>Relation building towards participatory governance institutions</b></p>	<p><b>Improving leadership and vision on land accessibility and use at the institutional level</b></p> <p><b>Improving communication, trust and coordinated action among institutional actors and civil society or hybrid organisations</b></p> <p><b>Fostering greater public conversation and greater awareness among Brussels' institutions</b> (including planning and territorial management actors).</p>

### 3.1. At the origins of the BBP's consortium. Organizational governance tensions on land.

Even if the approval of the EU funding 'ERDF' (European Regional Development Funds) in 2014 signed the formal start of the Boeren Brussel Paysans (BBP) project, the actual genesis of the coalition began before. We can argue that "perceptions and tensions around the availability, quality and use of the land-resources for local agriculture and food networks" (see scheme 1), were core factors of the coalition.

Perceived urbanization pressures on land in the proximity of the Neerpede region, solicited concerned administrative and policy officials of the local Municipality of Anderlecht to mobilize and advocate for controlling urban expansion while preserving and enhancing the rural character of the area (interview with the Division of Sustainable Development of Anderlecht). Regional land use regulations - declaring Neerpede as a rural-ecological region but foreseeing areas of urban transformation in its very proximity<sup>2</sup> - contributed to foment this perception of threat and urgency in some sections of the local administration. Thus a dimension of urgency, together with contrasting claims and practices over the use of land, show up as relevant instigating factors, contributing to raise the issue of land as a governance problem and fostering initial agential-organizational dynamics and tensions (see scheme 1 – Resource governance tensions).

Concerned members of the local authority started therefore to connect with institutional actors at the Regional level, in particular with the Ministry of the Environment. Having common interests on the protection of Neerpede and its agriculture and natural features, the Regional Environmental Ministry was open to collaborate and form a partnership<sup>3</sup>. At the same time, interactions of state agents with bottom-up food networks also played an important role in the genesis of the BBP coalition (see scheme 1 – organizational governance tensions). Urban agriculture activists – namely the no profit association *Début des Haricots* (DDH)– started to build relations with these local government agents in order to negotiate access to land for urban agro-ecological agriculture. Thus, first implementations of urban agriculture plots in a small scale took place even before the official start of the project. This implementation occurred in small scale municipally owned plots<sup>4</sup>, benefiting from project-based funding from the Ministry of the Environment, which at that time was running a program on "Food Systems Transition", part of a wider inter-governmental program<sup>5</sup>.

Thus initial tensions and partially converging claims around land preservation and use for local agriculture had a critical role in mobilizing actors, triggering organizational dynamics as well some scalar interactions between local and regional levels. This gave place to an initial hybrid network of actors, including the Municipality of Anderlecht, the administrative agency of the Ministry of the Environment, called IBGE<sup>6</sup>, and the no profit association DDH - which is constituent part of the nascent BBP's coalition. It is this core coalition that produced the project proposal for obtaining European Funds (ERDF), with the goal to conceive a pilot project which could implement and scale out small scale agriculture and more re-localized food chains in Neerpede-Brussels. Two other key actors entered the emergent coalition during the conception and elaboration of the project: *Terre en Vue* – an organization that focuses on facilitating access to land for small scale agro-ecological agriculture, mainly in the French speaking side of Belgium, and CREDAL – an agency that, among others, supports and facilitates access to credit for small entrepreneurial activities, including food and agriculture related<sup>7</sup>. The analysis reveals that the development of this partnership and its composition was favored by previously established knowledge networks among these participants, due to previous contacts and forms of collaboration among these actors in the local food arena. These proximity relations have undoubtedly helped to form the partnership.

The next paragraph moves further into the analysis of the land-resource governance tensions. This is done by showcasing challenges to address land accessibility and use for urban agriculture as they emerge

---

2 See the Regional Land Use Plan of the BCR, called PRAS (*Plan Régional d'affectation du Sol*), adopted in 2001 and so far still in force. The land use map can be consulted here: <http://www.mybrugis.irisnet.be/MyBruGIS/brugis/> [accessed on October 8 2017].

3 This was facilitated by a favorable political climate, since at that time, around 2013-2014, a 'green' coalition was in power. This coalition was the first to develop institutional policies and programs on sustainable food in the Brussels Region.

4 The implementation areas are two for a total of about a hectare at the moment.

5 For further elucidation on programmatic axe on Sustainable Food, see, among others, this document: ([http://www.environnement.brussels/sites/default/files/user\\_files/rap\\_aee\\_alim\\_rapport2014\\_fr.pdf](http://www.environnement.brussels/sites/default/files/user_files/rap_aee_alim_rapport2014_fr.pdf)). For a scientific evaluation see also Chevalier et al 2015 (<https://cidd2015.sciencesconf.org/51214/document>). [Accessed on October 8 2017].

6 IBGE stands for....

7 For further information see the respective websites (<https://www.terre-en-vue.be/?lang=fr>) and (<http://www.credal.be/>), [accessed on October 8 2017].



from actions and perceptions of the projects' partners as well as from the wider institutional landscape of the BCR.

### 3.2. Emerging land-resource governance tensions.

As previously stated (see introduction and section 2), together with the creation of more re-localized food networks, enhancing access to land for urban agriculture, is one of the pursued objectives of the BBP's coalition. Indeed, two of the project partners – i.e. *DDH* and, most of all, *Terre en Vue* – have the specific role of searching for potentially usable land, both within Neerpede as well as in the wider Brussels Region.

Hybrid governance tensions on land access emerge at different levels. First, on a very practical level, tensions and constraints are around material and legal aspects of land accessibility and use (see also scheme 1 – resource governance tensions). Lack of supportive attitudes of land owners and land holders makes it difficult to find space for urban agriculture and scaling food production out geographically across the Region. *Terre en Vue* and other partners clearly underline the 'patrimonial' and speculative attitude over land by a large part of land owners or land occupants in Brussels.

*"There is a multiplicity of owners, both private and public, and thus land parcels potentially suitable for urban agriculture are very fragmented. In addition, most of the owners - private as well as public - advance speculative practices on land. Thus there is no vision as well as no coordination among different owners of the land towards the fostering of alternative land use practices (...) Creating a consortium that stimulates coordination among different owners would be desirable, although very challenging".* (Extract from the interview with *Terre en Vue*).

This makes it difficult to arrange land use contracts which can be mutually beneficial for land owners as well as for potential producers.

Furthermore, land occupancy in some circumstances is also a problem. Where potential agricultural land is available in Brussels as well as in its peri-urban area, it may be occupied by conventional farmers which hold the land on the basis of very rigid land agreements. This constraints the transition of land towards different types of agricultural uses, such as small scale/locally oriented agriculture<sup>8</sup>.

*"If we consider the whole Neerpede, for instance, there is a high potential to expand small scale agriculture; however, land is already used, partly by professional farmers who perform conventional types of agriculture. We cannot simply ask them to go away or implement another kind of agriculture"* (Quote from one of the project partners).

This connects to the 'diverse visions and logics' with respect to land allocation, here visibly impacting land accessibility and use (see scheme 1 – organizational governance tensions).

Secondly, in general local administrations and land use regulations in the Brussels Region are scarcely open towards alternative forms of land use, such as agro-ecological food production. It is true that urban agriculture in Brussels has so far mainly developed as a spontaneous movement "in spite of local planning and administrative regulations" (interview with a planning expert)<sup>9</sup>. An open question is therefore how to address these cultural-institutional barriers and tensions, i.e. whether or not they should be tackled hands-on, and by whom. This point will be further addressed in the last section.

In general, controversial and ambiguous perceptions among diverse agents, organizations, and institutions are readable around the availability and usability of land for urban agriculture within the Brussels Region. While key civil society actors and urban agriculture advocates of the BBP push for searching land within the Brussels Region, other actors within the core partnership as well as in the wider Brussels' food arena, are more dubitative. Controversies and discussions mainly revolve around the actual availability and usability of land for urban agriculture within the Region.

*"The limited agricultural land in the Brussels Region is in competition with an increase in the population (+ 20% in 25 years) and the consequent need for infrastructures. Such pressure*

---

<sup>8</sup> The legal system in force is called "Bail à Ferme", which protects rights of conventional farmers. This system of rented land and protection of land rights to conventional farmers is in force in the Flemish Region as well (interview with VLM actors).

<sup>9</sup> Among the numerous references on the informal/spontaneous character of urban agriculture and the challenges to give an appropriate socio-institutional space see, for instance, Colasanti 2012; Thibert 2012; Certomà and Notteboom 2017; Tornaghi 2017;

*mortgages [FR: hypothèque] agricultural projects over the long term. Collaborations between the Brussels Region and the Provinces of Flemish Brabant and Walloon Brabant – being these two provinces the rural and food belt of Brussels - must favor the installation of an agriculture for Brussels”* (Extract from one of the project partners).

Urbanization pressures on land - also considering the expectations of demographic growth with the consequent need for housing and services, declared and embraced by regional planners and decision-makers<sup>10</sup> – are among the most visible constraints from a planning perspective.

*“We are in a phase of important demographic growth. Hosting this demographic growth is, since few years, one of the main challenges for the Brussels’ government. Both agriculture and housing require space”* (Interview with a planning expert).

Thus, how to tackle these tensions over legal and material aspects on land is an open question to the Brussels’ food debate and practices.

The next paragraph further develops these and other issues, addressing the kind of institutional responses on the land-resource question gradually emerged in Brussels, not without controversies and ambiguities.

### **3.3. What institutional responses to the land question? Grasping advancements and ambiguities.**

If we look at the institutional responses to the land question, and the role of the BBP’s coalition in that, we acknowledge both, some advancements as well as some drawbacks and contradictions.

As mentioned in section 2, it is arguable that one of the biggest questions is at what scale(s) the land challenge for Brussels should be addressed. Some agential-organizational dynamics preceding the formation of the BBP coalition showed attempts to bring the land question to a wider institutional scale, involving a dialogue with the Flanders’ Region. Voices from both sides - the BCR and Flanders - converge in highlighting the difficulties to work across spatial-institutional scales. On this point the BBP’s partners give accent to the constraining nature of the organization of the ERDF funds in Brussels, which does not facilitate collaborations with the Flemish side. In other words the way European funds, such as the ERDF, are managed by Brussels’ institutions follows a Regional-administrative logic, not allowing projects or actions to take place cross-border or outside administrative limits.

In summary, we acknowledge that administrative, institutional, but also more widely, cultural barriers are present, which hamper a collaboration. This confirms the relevance of institutional (and scale) governance tensions on the land-resource question as highlighted in scheme 1 – ‘institutional governance tensions’.

On the side of Brussels’ institutions concerned with urban agriculture and sustainable food systems, we observe some advancements as well as shadows and ambiguities. New incentives to the development of urban agriculture show up, at least in the discourse, in the newly approved Food Strategy. Launched by the new coalition of the Environmental Ministry in 2015<sup>11</sup>, the ‘Good Food Strategy’ seems to recognize the importance of urban agriculture in general, and of access to land in particular<sup>12</sup>. On the one hand, the importance of building relations with Flemish agents to sustain local agriculture in the Brussels’ hinterland is stressed (personal communication with the manager of the strategy). Looking at urban agriculture from a wider spatial perspective seems to be considered a fundamental step in the purpose to enhance the food security base and the provision of more healthy local food for Brussels<sup>13</sup>. This seems to be acknowledged by both, the BBPs partners as well as the wider Brussels’ food institutions. On the other hand, we can argue that actions and steps in this direction remain so far at a level of intentions.

Overall, uncertainties on how to tackle land accessibility and use for urban agriculture at different scales and levels persist. Some recent institutional actions seem to focus on the Regional administrative

---

<sup>10</sup> See the “PRAS Démographique”, i.e. the revision and adaptation of planning guidelines in the light of the foreseen population growth. <http://urbanisme.irisnet.be/pdf/pras/brochure> [accessed on October 8 2017].

<sup>11</sup> With some change of regional competence the new Ministry - Céline Fremault - is responsible for “Housing, Quality of Life, Environment and Energy”.

<sup>12</sup> See the axe 1 of the Strategic Document, “Increasing sustainable local food production”, available here: [http://document.enviroment.brussels/opac\\_css/elecfile/Strat\\_GoodFood\\_FR](http://document.enviroment.brussels/opac_css/elecfile/Strat_GoodFood_FR) [accessed on October 8 2017].

<sup>13</sup> Among others, the Strategy declares a target of 30% of fruits and vegetables that should come from the Brussels hinterland in a radius of 10km by 2030 (see the strategic document).



territory, highlighting legal-planning constraints and potentials to use land and spaces for urban agriculture within the Regional boundaries<sup>14</sup>.

#### **Section 4. Concluding discussions and reflections.**

From the above conceptual-empirical analysis it is possible to draw some understandings and lessons on how the governance of the access and use of land for urban agriculture can be improved towards more sustainable directions in the Brussels case.

By connecting into a partnership some of the key players on urban agriculture, the BBP coalition has the value of building a certain momentum around urban agriculture in Brussels. This has the potential to trigger greater institutional and civil society awareness on urban food production. In addition, the BBP has also started to address key resource needs of urban agriculture initiatives. Some urban agriculture implementation, the search for further accessible land and the provision of consistent support for the startup of potential urban farming activities, are relevant actions in that direction fostered by the BBP.

From the analysis emerges, however, that a big question for the Brussels' governance of urban agriculture and access to land, concerns how to take into account multiple spatial and institutional scales. This encompasses making space for urban agriculture within the Region, but also developing relations with the hinterland.

We could argue that the development of urban agriculture in the Region may benefit from a wider conversation with key planning and territorial management decision-makers in Brussels. Can urban agriculture, in its variegated forms and adaptations, be part of alternative/sustainable land uses for Brussels? What consequences in terms of urban development guidelines for the Region? Similar questions have not yet entered into a wide public debate. The new Strategy and the building of momentum for urban agriculture through the BBP project, may help to foster this dialogue. Yet, attention should be put on possible consequences of over-regulation of urban agricultures' land uses, as they may bring some tensions to the spontaneity of the urban agriculture movement (Raja 2014). Thus, public awareness, social pressure and debate should be perseverant in order to channel these tensions into positive directions.

We also acknowledge that a coalition like the BBP is a valuable starting point to address some of the tensions over access and use of land for urban agriculture. Agents such as *Terre en Vue* and *ad hoc* organizations can help to coordinate supply of land with demand for land by potential urban farmers, also helping to overcome some of the obstacles connected to land resource accessibility and use (e.g. working on land use contracts, mediating among land owners and project holders, advocating for alternative land uses, etc. – See scheme 1 first row – 'resource governance tensions'). Thus, giving incentives and support to the development of targeted coalitions or actors' networks, that build on achieved knowledge and actions, is a valuable way forwards (see Scheme 1 – fourth column 'organizational governance tensions'). Such coalitions should be sustainable in terms of resources and timeframe, in order to be able to operationalize some targets. Despite difficulties in coordinating and cooperating, relational proximity among actors composing these networks can help to foster collaborations.

From the institutional side, a good coordination between the work of actors' networks and the wider policy objectives at the institutional level should be achieved (See scheme 1 – fourth column, 'institutional governance tensions'). In the case of Brussels, for instance, the institutional agency responsible for urban agriculture in the frame of the new Food Strategy, experiences some weaknesses in resources and human capital. Thus, lack of vision and good communication between institutional level and urban agriculture organizations do not help to build trust and foster a more coordinated action on the land question.

A final open point concerns scalar challenges related to widening the land question to the Brussels' hinterland, as the most extensive and quality land resides outside Brussels. Some actions fostering connections with the hinterland are partially already in place. Responding to Regional public markets,

---

<sup>14</sup> The reference here is to a recent study launched by the Agency responsible for agriculture issues in Brussels, tackling the understanding and removal of legal and planning constraints for urban agriculture in the Brussels Region. Currently the study is in process of completion.

organizations such as *Terre en Vue* are starting to target the hinterland<sup>15</sup>. New urban-peri-urban agriculture projects, helped by the connection of new farmers with Community Supported Agriculture's or other short food chains' networks, is a tool that is partially adopted in Brussels and that can be improved or used in a more systemic way. Thus, it is possible to work from the bottom-up. However, scalar challenges remain that need a wider institutional support as well as a greater coordination of decision-makers between the Flemish and the Brussels' Region. These issues encompass, among others, the reform of land use contracts towards greater support to small scale farmers; the development of cross-border projects and collaborations among the Brussels's Region or Brussels' municipalities and bordering local authorities, in order to find win-win agreements for land preservation and development of short food chains.

## Acknowledgements

*This working paper has been developed in the frame of a doctorate project at the KULeuven and VUB, supported by the Flemish Research Agency FWO and supervised by Prof. Frank Moulaert and Prof. Bas van Heur. I thank my supervisor for the useful inputs. I am also very grateful to all the actors interviewed during my field work for the precious information and the follow-ups. I therefore thank all the Boeren Brussel Paysans actors and other knowledgeable informants, such as David Dupuis (Terre en Vue), Catherine de Zuttere (ERU urbanisme), Johan Laeremans and Luc Vander Elst (VLM), Frank Nevens (UGent) and others.*

## Bibliography

- Angotti T., 2015, Urban agriculture: long-term strategy or impossible dream? Lessons from Prospect Farm in Brooklyn, New York, *Research Policy* 31(2002) 1257–127
- Aubry C., and Kebir L., 2013. Shortening food supply chains: A means for maintaining agriculture close to urban areas? The case of the French metropolitan area of Paris, *Food Policy* 41, 85–93
- Block, D. R., Cha'vez, N., Allen E., and Ramirez, D., 2012. Food sovereignty, urban food access, and food activism: contemplating the connections through examples from Chicago, *Agriculture and Human Values*, 29:203–215
- Borras SM., Franco JC., and Suárez SM., 2015. Land and food sovereignty, *Third World Quarterly*, Vol. 36, No. 3, 600–617
- Chevalier, C., Courtois M., Kampelmann S., and van Vyve, M., Pouvoirs Territoriaux et la transition vers une économie écologique: le cas de l'alliance emploi-environnement en Région de Bruxelles-Capitale, Paper from the TURAS project (European Union)
- Seventh Programme for research, technological development and demonstration). Certomà C., Notteboom, B., 2017. Informal planning in a transactive governmentality. Re-reading planning practices through Ghent's community gardens, *Planning Theory* 2017, Vol. 16(1) 51–73
- Chavez Villanueva, A., 2017. Integrating urban and peri-urban agriculture. A vision for the Case of Neerpede in the Brussels-Capital Region. Vrije Universiteit Brussel. Unpublished Master Thesis.
- Classens, M., 2015, The nature of urban gardens: toward a political ecology of urban agriculture, *Agric Hum Values* (2015) 32:229–239
- Colasanti, K. J. A., Michael W. Hamm & Charlotte M. Litjens, 2012. The City as an "Agricultural Powerhouse"? Perspectives on Expanding Urban Agriculture from Detroit, Michigan, *Urban Geography*, 33:3, 348-369
- Darby, S., and Torre, A., 2013. Conflicts over farmland uses and the dynamics of "agri-urban" localities in the Greater Paris Region: An empirical analysis based on daily regional press and field interviews, *Land Use Policy* 33 (2013) 90–99
- De Schutter, O., 2010., The Emerging Human Right to Land, *International Community Law Review* 12 303–334 INTERNATIONAL COMMUNITY LAW REVIEW [brill.nl/iclr](http://brill.nl/iclr)
- Follmann A., and Viehoff V., 2015. A green garden on red clay: creating a new urban common as a form of political gardening in Cologne, Germany, *Local Environment*, 20:10, 1148-1174
- Jonas, A. E. G., Pro Scale: Further Reflections on the "scale Debate" in Human Geography, *Transactions of the Institute of British Geographers*, New Series, Vol 31, No 3, pp.399, 406.

---

15 A recently initiated project concerns the development of small scale agriculture in a 5 hectares area close to Brussels, called Overijse: <https://terre-en-vue.be/les-projets/bruxelles/appeal-a-candidatures-overijse/?lang=fr> [accessed on 20 October 2017].

- Kim BF, Poulsen MN, Margulies JD, Dix KL, Palmer AM, et al., 2014. Urban Community Gardeners' Knowledge and Perceptions of Soil Contaminant Risks. *PLoS ONE* 9(2): e87913.
- Manganelli A., 2013, Nurturing Urban Development. The impact of Urban Agriculture in the Brussels-Capital Region, Politecnico of Milan, Unpublished Master Thesis.
- Manganelli A., and Moulaert, F., 2017, (in preparation), Alternative Food Networks: hybrid governance from the bottom-up.
- Manganelli A., and Moulaert, F., 2017, Governance Tensions in Alternative Food Networks: The case of the Brussels GASAP (Solidarity Purchasing Groups for Peasant Agriculture), (in preparation).
- McClintock, N., 2014, Radical, reformist, and garden-variety neoliberal: coming to terms with urban agriculture's contradictions, *Local Environment*, 19:2, 147-171.
- McMichael P., 2015, The Land Question in the Food Sovereignty Project, *Globalizations*, 12:4, 434-451
- Messely L., Dessein J., Lauwers L., 2009. Regional Identity in Rural Development. Three case studies of Regional Branding, Paper prepared for presentation at the 113
- The EAAE Seminar The role of knowledge, innovation and human capital in multifunctional agriculture and territorial rural development, Belgrade
- Messely L., 2014. On regions and their actors. An analysis of the role of actors and policy in region-specific rural development processes in Flanders. PhD-thesis, Ghent University, Ghent, Belgium.
- Moulaert, F., Martinelli F., Swyngedouw E., and Gonzalez, S., 2005. Towards Alternative Model(s) of Local Innovation, *Urban Stud*, 42: 1969
- Moulaert, F., Martinelli, F., Swyngedouw E., and Gonzalez, S., 2007. Introduction: Social Innovation and Governance in European Cities: Urban Development. Between Path Dependency and Radical Innovation, *European Urban and Regional Studies* 2007 14: 195
- Moulaert, F., Martinelli, Swyngedouw E., and González, S., 2010, *Can Neighbourhoods Save the City? Community development and social innovation*, Routledge: London and New York.
- Moulaert, F., MacCallum, D., Mehmood A., and Hamdouch, A., Eds., 2013. *The International Handbook of Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*, Edward Elgar: Cheltenham
- Pradel, M., García, M., and Eizaguirre, S., 2013. Theorizing multi-level governance in social innovation dynamics. In: F. M., Editor, D. MC., Editor, A. M., Editor, A. H., Editor, eds, *the International Handbook of Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*, Edward Elgar: Cheltenham, pp.325-349.
- Prové C., Dessein J. and Michiel de Krom, 2016, Taking context into account in urban agriculture governance: Case studies of Warsaw (Poland) and Ghent (Belgium), *Land Use Policy* 56 (2016) 16–26
- Purcell M., & Shannon K. Tyman, 2015, Cultivating food as a right to the city, *Local Environment*, 20:10, 1132-1147
- Raja, S., Picard, D., Baek, S., & Delgado, C. (2014). Rustbelt radicalism: A decade of food systems planning in Buffalo, New York (USA). *Journal of Agriculture, Food Systems, and Community*, 1-17. Development.
- Swyngedouw E., and Jessop, B., Regulation, Reproduction, and Governance: Achilles' heel of Development, Thematic Synthesis Paper 3, Demologos, Available from: <http://demologos.ncl.ac.uk/wp/wp2/disc.php>, [Accessed 14 March 2017]
- Swyngedouw, E., and N. Heynen. 2003. Urban political ecology, justice and the politics of scale. *Antipode* 35(5): 898–918
- Swyngedouw, E., 2004. Globalisation or 'glocalisation'? Networks, territories and rescaling, *Cambridge Review of International Affairs*, 17:1, 25-48
- Swyngedouw, E., and Kaika, M., 2014. Urban Political Ecology. Great Promises, Deadlock...and New Beginnings?, *Documents d'Anàlisi Geogràfica*, 2014, vol. 60/3 459-481
- Tornaghi, C., 2014, Critical geography of urban Agriculture, *Progress in Human Geography*, Vol. 38(4) 551–567
- Tornaghi, C., 2017, Urban Agriculture in the Food-Disabling City: (Re)defining Urban Food Justice, Reimagining a Politics of Empowerment, *Antipode* , Vol. 49 No. 3 2017 ISSN 0066-4812, pp. 781–801
- Wekerle G.R., & Michael Classens, 2015, Food production in the city: (re)negotiating land, food and property, *Local Environment*, 20:10, 1175-1193\*

# **(Re)defining viability through agroecological practices : The case of urban market gardeners in Brussels.**

**Noémie Maughan<sup>1</sup>, Nathalie Pipart<sup>2</sup>, Barbara Van Dyck<sup>3</sup>, Marjolein Visser<sup>1</sup>**

<sup>1</sup>Service d'Écologie du Paysage et Systèmes de Production Végétale (EPSPV), Université Libre de Bruxelles

<sup>2</sup>Centre d'Études Économique et Sociales de l'Environnement (CEESE), Université Libre de Bruxelles

<sup>3</sup>Science Policy Research Unit (SPRU), Sussex University

---

**Keywords:** urban market gardening, agroecology, trade-offs, viability, participatory action research

---

## **1. Introduction**

Brussels, as many other cities, is the stage of a fast and dynamic spawning of a broad range of urban agricultural projects, among which (peri-)urban market gardeners. In the start-up phase of their professional development, urban market gardeners face a broad range of technical and ecological choices among the production models they experiment. Along their search for viability they broadly identify their economical sustainability as the first hurdle to overcome, before exploring other dimensions of resilience. Those choices are often made at the expense of their initial socio-ecological aspirations (Morel, 2016, uses the term compromise). However, many of these urban market gardeners (are expected to) embrace a longer term or agroecological scope as well. Guided by their environmental aspirations and coping with the in vogue social representation of organic farming, better food for better health, etc., neo-farmers find inspiration in natural farming (Fukuoka, 1992) or permaculture practices (Mollison and Holmgren, 1981), while the imperative financial viability requested by funders and professionalized support organizations tends to lower their environmental standards to those of the bio-intensive models such as those promoted by Coleman (1995), Jeavons (2001), Fortier (2014) or Stone (2015). This paradox risks to strip away the transformative potential of peri-urban market gardening initiatives. In our research we seek to explore how through participatory action research (PAR), which includes scientific research, awareness building and action combined (Fals-Borda 1987, Kindon et al. 2007), and by mobilizing the concept of agroecology, we can contribute to strengthening the socio-ecological transformative power of (peri-)urban market gardening.

The Brussels Capital Region – through a financing programme from the Brussels Research and Innovation Agency<sup>1</sup> – is currently offering a PAR framework as part of a specific program that aims at fostering sustainable food systems in the Brussels Region in which we participate. Our research team includes not only academic researchers but also a counsellor and two (peri-)urban market gardeners. We aim at co-creating knowledge and innovations that explore the viability of the SPIN-farming model as adapted by the latter into a “business model” for urban agriculture in Brussels<sup>2</sup>. In this paper, we wish to take advantage of this privileged position to discuss the practicability of operationalizing the overall viability concept in an agroecological sense. We will do so through one case study : exploring with Cycle Farm – a Brussels based market gardening project - the practices they design while adapting a market gardening bio-intensive model and co-developing a common understanding of the gap between this reality and their “agroecological vision”.

## **2. Bio-intensive urban agriculture for ‘the sustainable city’?**

A large and fast-growing body of literature documents the benefits of urban agriculture with the potential to improve nutritional and psychological health (Wakefield et al. 2007, Freeman et al. 2012) to address problems associated with food quality and affordability (Kremer and DeLiberty 2011, Metcalf and Widener, 2011), reduce ecological footprints (Viljoen 2005, van Veenhuizen 2006), increase community cohesion (Bellows et al. 2003, Alaimo et al. 2008, Robinson-O’Brien et al. 2009), achieve greater community resilience and promote urban sustainability (Tornaghi, 2014). Encouraged by urban agriculture’s potential contribution to fresh vegetable production, physical activity, green space, job creation, entrepreneurship, storm-water retention, greenhouse gas mitigation, neighbourhood beautification, “eyes on the street”, and community-building, municipalities across North America

---

<sup>1</sup> See Co-create call Innoviris <http://www.innoviris.be/fr/co-create-living-labs-pour-des-systemes-d'alimentation-durable-en-rbc>

<sup>2</sup> <http://www.cocreate.brussels/rubrique4.html>

(Lerner 2012, McClintock et al. 2012, Thibert 2012), UK and the Global North (Tornaghi, 2014) are drafting policies to foster urban food production.

Most of urban agricultural practices – either grassroots or institutional – are emerging in dialogue with – or as a challenge to – the current western, pro-growth and market-driven rhetoric on the sustainable city. In many occasions, food-growing projects are funded by ‘greening’ agendas and become both directly and/or indirectly, new tools or justifications for a new wave of economic-growth-led policies (Tornaghi, 2014). In addition, many urban agriculture efforts complement their radical critique of an inequitable food system with market-based solutions, locating solutions to social problems within the market rather than the state. (Holt-Giménez and Wang 2011, Alkon and Mares 2012).

The Brussels regional government (Belgium) has been promoting research<sup>3</sup> and supporting local development programs to foster sustainable food systems<sup>4</sup> in the Brussels Region since a few years. Several of these programs focus on (peri-)urban market gardeners and on the potential these “business model” hold for a viable urban agriculture in Brussels. However, many controversial dynamics lie under these apparent opportunities for urban agriculture. They not only impose obstacles to its expansion, but also raise questions about the forces driving urban agriculture and its sustainability. As an example, limited land access in Brussels, alike any peri(-urban) context, is for most (peri-)urban market gardeners impossible to inflect on. Consequently, a strategy commonly developed by the broad range of urban agricultural projects is to either have this difficult access to land facilitated by public agencies or benefit from punctual support of public funders for investment capital of start-ups (aides publiques à l’installation), part-time salaries, etc (Verdonck et al., 2012).

In Brussels, public funders, while declaring to align with the idea of organic farming, better food for better health, etc.<sup>5</sup>, tend to grant support on a short-term basis (1-3 years) and under an imperative financial viability condition. In order to compete for the same modest grants, (peri-)urban market gardeners are then expected to quickly achieve their financial viability, while still embracing a longer term or agroecological scope. Still confronted with both scarce access to land and low investment capital, they consequently seek viability through increasing their financial return per unit area. To achieve this, they face a broad range of technical and ecological choices among the production models they experiment. Given that most of them are neo-farmers, they cannot rely on ancestral or family transferred knowledge or skills and compensate these lacks through inspiration among the controversial bio-intensive models (see Box 1 & 2).

If the combination between an imperative financial viability condition and the rhetoric on the sustainable city leads neofarmers to lower their environmental standards, we believe there is a risk of stripping urban agriculture from its transformative potential by « green-labelling » practices that: (a) do not recognize the socio-political dimension of urban agriculture; and (b) do not question the extractive logics of the industrial food system. In our research we therefore seek to reflect upon how to engage with urban agriculture on the ground, in ways that contribute to transformative socio-ecological change.

---

3 See Co-create call Innoviris <http://www.innoviris.be/fr/co-create-living-labs-pour-des-systemes-d'alimentation-durable-en-rbc>

4 See Good Food Strategy <http://www.goodfood.brussels>

5 Tornaghi (2014) talks about “green”- or “ecological turn” that generally encompasses categories such as ecological footprints, community resilience and energy efficiency.

**Box 1 : Bio-intensive models : a glimpse of history**

Initially designed in the seventies (Alan Chadwick, John Jeavons), bio-intensive agriculture is inspired by biodynamic agriculture (Rudolf Steiner) and XIXth Century French intensive gardening methods. These latter were (re)discovered and were brought back into fashion in the nineties by market gardeners (Eliot Coleman).

Bio-intensive agriculture would enable small-scale farms and farmers who lack the resources (or desire) to implement commercial chemical and fossil-fuel-based forms of agriculture to significantly increase food production and income, utilize predominantly local, renewable resources and decrease expense and energy inputs. It is based on a broad range of techniques : double digging, composting, raised beds, mixed cropping, plantation densification (Jeavons, 2001), seasonal extension, locally optimized timing of sowing and harvesting, prevention-not-treatment approach to weed control, new hand tools and machinery for fast, light, frequent cultivation (Coleman, 1995; 2009).

In the last ten years, more recent bio-intensive models were born in Quebec (Jean-Martin Fortier), Canada (Curtis Stone) and also in France (Ferme du Bec Hellouin).

**Box 2 : Bio-intensive agriculture : Tipping over**

The development of the big business phase of the organic food era has led Coleman, as well as others, to emphasize the ways in which small, local growers can have competitive advantages to keep their businesses strong : “At one time just being organic was enough, but now something more is needed to compete” (Coleman, 2009). Coleman thus starts advocating business growth through improved production and marketing. Beyond merely the question of who is able to compete on price, Coleman also explores the very difference between shallow organics and deep organics, which reaches all the way into discussion of economic systems and lifestyles (Coleman, 2009).

Jean-Martin Fortier and his certified market garden have become internationally known only a decade ago for achieving profitability and productivity using biologically intensive cropping systems. Advocating for a small-scale economically-viable sustainable agriculture, Fortier’s low-tech, high-yield methods of production employed on the micro-farm form the basis of the French bestselling book and toolkit “the Market Gardener: A successful grower’s handbook for small-scale organic farming”(Fortier, 2014) which gathers not only information on small-scale equipment – that includes walk-behind tractor (two-wheel or walking tractor) - soil management, seeding, weed management, insect and disease management and crop planning but also marketing and market garden design. Efficiency is achieved through multiple successions of plantings, optimizing labor and materials, standardization of the size of growing spaces (that facilitates crop rotation, production planning, calculation of soil amendments, and use of materials such as irrigation lines and row covers).

### **3 Exploring agroecological viability through a Participatory Action Research approach**

Our research design is grounded in Participatory Action Research (PAR) as a research approach. PAR for us, and many other researchers in the PAR-tradition, is about “jointly producing knowledge with others to produce critical interpretations and readings of the world, which are accessible, understandable to all those involved, and actionable.” (Chatterton et al. 2007, p 218). The approach is informed by critical theory, in the sense of developing an understanding to “how power in social, political, cultural and economic contexts informs the ways in which people act” (MacIntyre 2008, p3) and by popular education in the way it seeks to generate knowledge which starts from situating experience-based knowledge in a systemic perspective, and which is aimed at developing strategies of emancipatory change (Fals-Borda and Rahman 1991, MacIntyre 2008, Kindon et al. 2007). Such approach implies deep connections and researcher’s solidarity with others involved in the process. Ideally, research is based upon a collective commitment to investigate and upon a desire to engage in critical reflection that helps to gain clarity and make sense of shared issues (MacIntyre 2008). People, farmers and researchers alike, work together while bringing in different experiences, skills, knowledges and positions to the discussion. To achieve these aims, we set up a process of experiential learning that aims at facilitating the analysis and reflexivity of both researchers and neo-farmers regarding their activities. Thanks to a specific research program that aims at fostering sustainable food systems in the Brussels Region, we had the opportunity to gather a research team including not only academic researchers but also counsellors and 2 (peri-)urban market gardeners around a living lab Cycle Farm cooperative (see point 4.1.). We started from the experience of CycleFarm and we created spaces that allow to foster reflexivity and think together. Through a joined research process, we aim at co-creating knowledge and innovations that explore the viability of SPIN-farming model for urban agriculture in Brussels. Our three years’ research program, designed to explore and support the (agroecological) viability of (peri-)urban market gardening projects nevertheless immerses us into a paradox : the specific context of start-up phase obviously implies for researchers - as well as neofarmers - to study and contribute to the unfolding of long-term dynamics (develop agroecological practices and strategies for vegetable growing) within a very short-term framework. We are part of a dynamic that promotes sustainable food systems of which actors themselves are put in a internal contradictory situation where planning on achieving sustainability becomes almost unrealistic.

In this paper, we wish to take advantage of our privileged position as part of a participatory action research team including (peri-)urban market gardeners to explore this paradox with them through assessing their initiative more substantially for the type of sustainability they pursue. In the following paragraphs we show how we co-developed a common understanding of the existing gap between their “agroecological vision” and the reality of a market gardening bio-intensive model, shaped by the imperative financial viability through the public funding framework/policies.

### **4 Co-creating (agro-)ecological principles in the Spin Farming model.**

#### **4.1. Cycle Farm**

Cycle Farm started to grow vegetables on very small areas south of Brussels in the winter 2015. Initially inspired from the trend of Small Plots INTensive Farming (or SPIN Farming) (see Box. 3), their market gardening project lead to a research project, SPINCOOP, which started in November 2015 as part of the Co-create call 2015 funded by Innoviris. Organised in different workloads and exploring various dimensions (soil and fertility, tools and mechanization, time organization and workloads, economics, landscape design, social organisation) SPINCOOP unfolds along two main steps : 1) adapt the SPINFarming model/techniques to the Brussels context, 2) Lean on this adaptation to explore the building of a collective production organisation : the Cycle Farm Cooperative (See Fig.1).

This case study emerged in the ongoing process of building the collective structure of Cycle Farm, supported by three researchers (CEESE et EPSPV) and one consultant (Crédal) since the beginning of 2016.

In their adaptation of the SPIN Farming model, Cycle Farm’s market gardeners chose for securing access to land through negotiation and one-to-one agreements with private landowners. Today, they gather 5 plots which make for approximately 2400 m<sup>2</sup> of cultivated land (= 0,6 Acre). Apart from the “multi-sites” or “patchwork” farming strategy, Cycle Farm adds to this already very demanding context by focusing on three additional aspects :

(1) bio-intensive cultivation (2) quick-growing<sup>6</sup>, high value, high yield, short-days-to-maturity popular crops, (3) mainly marketed through high-ranked local restaurants.

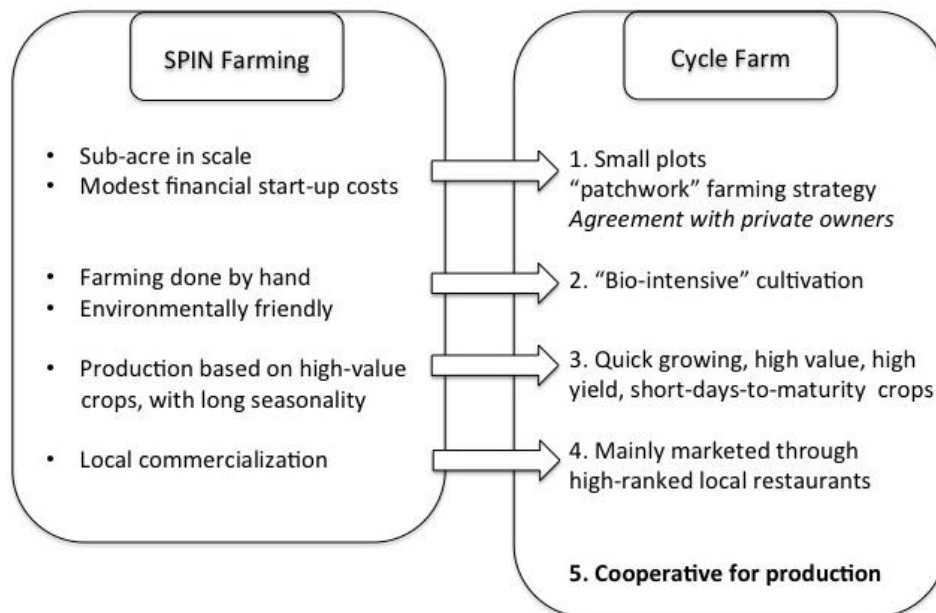


Figure 1 : SPIN-farming's adaptation strategy of Cycle Farm

Alike many other market gardeners in the start of their professional development, Cycle Farm's bio-intensive production techniques consist in a combination of different influences and environmental aspirations. Initially driven by the SPIN Farming and to a lesser extent, by the Lean Farming (See Box 3), Cycle Farm's market gardeners also found inspiration in natural farming (Fukuoka, 1992), permaculture practices (Mollison and Holmgren, 1981) and living soil<sup>7</sup> practices. As partners of this research focused on sustainable food systems, Cycle Farm (is expected to) embrace a longer term or agroecological scope.

### Box 3: New-born bio-intensive models : The controversy

S-mall P-lots IN-tensive Farming philosophy finds its origins in the US and intends to turn backyards, front lawns or neighborhood lots into a significant supply of commercial-grade crops with new levels of productivity and profitability that go far beyond traditional (self-sufficiency) home gardening practices<sup>8</sup>. Beyond the initial headline of "making agriculture accessible to anyone, anywhere"<sup>7</sup>, SPINFarming justifies a "moneymaking farm business". Curtis Stone and his Green Acres Farm (Kelowna)<sup>9</sup> represent a pioneer example of a profitable SPINFarming project, highly prolific on the social medias and providing with a book and a rather expensive online course.

Lean production is based on a management philosophy – mainly derived from the Toyota Production System - that operates along two simple concepts : value and waste, and deeply rely on the involvement of the workers (Hartman, 2015).

<sup>6</sup> Curtis Stone makes a distinction between micro-greens (6-14 days growth), quick crops (less than 45-days-growth) and steady crops (more than 45-days-growth up to 300 days).

<sup>7</sup> See *marachage sur sol vivant* : <http://marachagesolvivant.org>

<sup>8</sup> See <http://spinfarming.com>

<sup>9</sup> See <http://www.greencityacres.com> and <http://theurbanfarmer.co>



We suggest new-born bio-intensive models were designed in an environmental- but mainly economical crisis context in North America (that probably can find a similar echo in Europe). Fortier, Stone and Hartman find a goal in demonstrating that small-scale farming can be an attractive career (change) option for (young) people.

Nevertheless, we believe these models are digressing from social responsibility and the environmental sustainability that they assert and that they are, given their displayed profit and market orientation, more and more drifting away from agroecology.

In fact, these models still rely substantially on “non-living” industrial cultural energies (fossil fuels, mechanization, chemical inputs) instead of investing into their cultural and social capital through optimising biological or “living” energies (biomass production - derived from the sun and intercept through photosynthesis - and transfers) (Gliessman, 2006; Visser, 2013). Van der Ploeg uses the term labor-based productivity (2008). Beyond the claimed economical viability, it seems they ensure that the underlying growth-oriented economic model continues its smooth reproduction.

#### 4.2. Co-defining an analytical framework

At the time we write this paper, and in order to concretize its ambition to expand, Cycle Farm is in need to clarify its collective vision, including the environmental sustainability aspects. Indeed, while adapting the SPIN Farming model to the Brussels context, Cycle Farm faces a range of technical and ecological (among others) choices. They chose not to acquire organic certification and – like an increasing number of (peri-)urban market gardeners, claim to explore beyond the official organic specifications. It seemed necessary to dig deeper in order to clarify for Cycle Farm what is often relegated behind the blurry concept of ‘eco-friendly’ and ‘local’ food production.

The aim is to bring Cycle Farm to identify a series of key principles that would allow them to clarify their (agro-ecological) vision and guide their self-assessment in time. Which values do they stand for? Where do they put the limits of production? At the same time, this process would allow the research project SPINCOOP to situate Cycle Farm regarding urban market gardening in general and the generally accepted SPIN Farming model, and spot the differences and specificities as future leads of investigation.

The process that informs this research paper was firstly initiated by the researchers (step 1 & 2), then collectively designed and carried further by the entire team (step 3 & 4).

##### Step 1

First the research team (farmers and researchers included) were asked to name and describe the existing or future elements which make Cycle Farm a sustainable project, an agroecological project, a project that respects the environment.

These elements were grouped and summarized into « themes », which were then organized to design a Socratic Wheel<sup>10</sup>. This simple tool has been chosen because it integrates both quantitative and qualitative information, has greater rigor than many other participatory methods, and can be scaled up for more rigorous analysis. Moreover it involves participants in assessing and contextualizing the findings as they are created.<sup>11</sup> The completion of this exercise would give us a synthesis of Cycle Farm’s (agroecological) vision and enable us to assess its evolution in the future.

##### Step 2

The second step confronted this first self-generated list of elements with three selected sets of existing principles. These sets were respectively inspired by Holmgren (2002), Van der Ploeg (2008) and Stassart et al. (2012). We deliberately chose these three sets, Peasantries and Agroecology being key-references for our research laboratory and Permaculture being an initial inspiration for our neo-farmers.

Although the word *permaculture* originally referred to “permanent agriculture”, it was later expanded to twelve agricultural and social design principles centred around simulating or directly utilizing the patterns and features observed in natural ecosystems. Mollison & Holmgren (1981) wrote:

---

<sup>10</sup> Also termed “Spider Web”, the Socratic Wheel is a participatory rating tool that can be combined with a wide range of techniques to answer multiple questions. It can be used as a simple assessment tool to reveal changes in progress or conditions for success/improvement. (Chevalier & Buckles, 2013)

<sup>11</sup> <https://www.outcomemapping.ca/download/Progress%20Marker%20Presentation%20Outcome%20Mapping.03.27.13.Final.pdf>

"Permaculture is a philosophy of protracted and thoughtful observation rather than protracted and thoughtless labour; and of looking at plants and animals in all their functions, rather than treating any area as a single production system." Its principles are short, broad and action-oriented : Observe and interact, Obtain a yield, Use and value diversity.

Extracted from Van der Ploeg's work on the peasant condition and the ongoing re-peasantization process, the six peasant principles are associated with the search for greater autonomy and higher performances of the peasant way of farming compared to those of corporate agriculture in terms of efficiency of resource use (water, land, labour, capital), of quality of products, life quality and social inclusion. They rely on strategies to acquire autonomy such as: the creation, development and strengthening of a self-controlled resource base which embraces both social and natural resources,<sup>12</sup> co-operation and reciprocity, resource sharing, high production through labor-based intensification.

The list of agroecological principles summarized and enriched by the Belgian research group GIRAF<sup>13</sup> assembles historical principles developed by Altieri (1995), *methodological* principles and *Socio-economical* principles. They range from more 'traditional' agroecological elements such as soil conditions, agrobiodiversity, biological synergies, to participatory research processes, knowledge and collective adaptation capacity building, ...

This second step enabled the participants to develop, modify, sharpen the self-generated list and extend it.

### Step 3

A month later, a second meeting enabled the team to clarify the wording and meaning of each new principle and start appraising the gap between the actual and desired situation of Cycle Farm in time. This process was made easier through the exercise of exemplifying each principle with concrete present or planned practices developed by Cycle Farm.

### Step 4

Shortly after the second meeting, the team met to connect the twelve Principles to real practices in order to help Cycle Farm self-monitor its development.

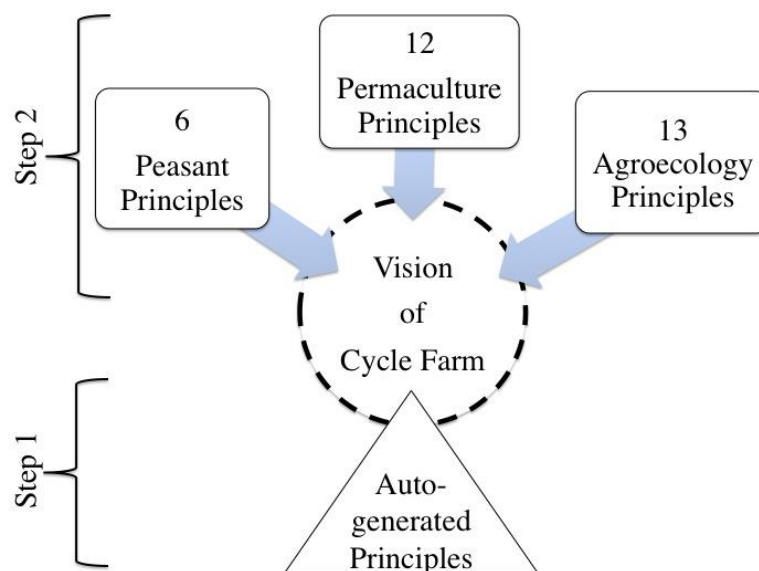


Figure 2 : The two first steps of designing the Vision of Cycle Farm

## 5 First findings

<sup>12</sup> Knowledge, networks, labor force, land, cattle, irrigation channels, terraces, manure, crops, etc.

<sup>13</sup> GIRAF or Groupe Interdisciplinaire belge de Recherche en Agroécologie du FNRS (Belgian Interdisciplinary Agroecology Research Group of the FNRS) is an interdisciplinary contact group composed of scientists with various backgrounds and funded by FNRS. <http://www.agroecologie.be>

In this section we want to give a first insight of the most obvious elements that our analysis put into light. In the full paper, we will develop and expand upon these elements.

First of all, Step 1 brought up six self-generated principles for Cycle Farm.

#### **1. Living soil**

Cycle Farm considers the soil as an ecosystem that needs to be “put back into life” and “maintained alive” with the least amount of mechanical disruption.<sup>14</sup>

#### **2. Relocate fertility flows**

Cycle Farm aims to get most of its fertility inputs – organic fertilizers, manure, leaves, etc. – locally and to tend toward circularity insofar as possible.

#### **3. Lower carbon footprint**

Cycle Farm focuses on maintaining a low impact on the environment through a lesser use of fossil fuels regarding mechanization, inputs and transports.

#### **4. Boost functional biodiversity**

Cycle Farm preserves and integrates the spontaneous biodiversity on each cultivated site and boost biological synergies as key to ecological processes and services.

#### **5. Take care of oneself (invest for a comfort/well-being in the long run)**

Cycle Farm realizes investing in their social and ecological capital<sup>15</sup> in relation with work (in)security, autonomy, intrinsic benefits of work and work-related (dis)comfort,<sup>16</sup> is key to secure a comfort and well-being in the long run.

#### **6. Find a balance between a financial viability and a feeding model**

Cycle Farm is in search of its own balance between market-oriented strategies, in order to rapidly achieve financial viability, and the aspiration of producing a wide variety of all sorts of vegetables and supply for the housekeeper’s basket at an affordable price.

In a second stage, when confronted with three selected sets of existing principles (Permaculture, Peasantries and Agroecology) six new principles were added to the list.

#### **7. Rely more on water and solar energy**

In order to boost biodiversity and resilience, Cycle Farm catches and stores energy, lowers resources’ losses due to solar radiation flows, collecting rainwater, permanently covering the soil...

#### **8. Adapt to micro-heterogeneity**

Cycle Farm observes and interacts with the spatio-temporal variability of resources, adapts to the different microclimates, soil heterogeneities, spontaneous vegetation in place, etc.

#### **9. Feed the local economy**

Cycle Farm reflects on distancing from global markets through reducing the scope of a) sales -producing locally and directed to the city of Brussels and its hinterland - and b) sources of supply – supporting more local and self-governed providers.

#### **10. Put some cleverness back into agriculture**

This rather vast principle could be better understood as to « Learn again to know what, how and why we do what we do ». This leads us to think that urban market gardening is not (only) about learning or designing technical itineraries but firstly about models of thought.

#### **11. Share knowledges and know-how**

Cycle Farm’s market gardeners realised that, to nurture their own model of thought, they were sharing (new) knowledge between themselves and with others – including the SPINCOOP research partners – and that they were brought to transfer these knowledge and know-how to others too (trainees, etc.).

#### **12. Develop a systemic approach**

Cycle Farm designs from patterns to details and develops a multi-criteria management.

---

<sup>14</sup> <http://maraichagesolvivant.org>

<sup>15</sup> Gliessman, 2006; Ploeg, 2008 ; Visser, 2013

<sup>16</sup> Dumont, forthcoming

Certain existing principles raised interest in the course of the discussions but were not included in Cycle Farm's principles such as : the Value of agro-biodiversity as the entry point for re-concepting systems that guarantee autonomy for the farmers and food sovereignty (Stassart et al., 2012) or the Centrality of craft and skill-oriented technologies (Ploeg, 2008). Although they consider the importance of these elements, Cycle Farm concedes they are not yet part of the current reflection. Controversial elements were also put into light.

#### Cultivated biodiversity versus hybrid seeds

In Europe, a few cooperatives such as Biggenheimer (Germany) or the more recent Cylce en Terre (Belgium) make relying on productive, diversified and adapted local seeds varieties possible, although still very challenging. While Cycle farm is aware that this constraint is crucial in the foundation of producer's autonomy, it is absolutely not a priority for them at this point.

#### Short-term financial viability versus long-term viability

We've observed neo-farmers tend to think on a relatively short-term basis and appear to broadly identify their economical sustainability as the first hurdle to overcome, to be able to explore other dimensions of resilience next (Plateau et al., 2017).

## 6 Discussion & Conclusion

In this abstract, we brought the attention of the reader on two intertwined paradoxes.

First, we showed that the development of peri-urban market gardeners in Brussels receive public support in the framework of sustainable food systems support and research programs, while they are simultaneously supposed to be viable financially. We observe here a paradox that has been described by McClintock (2014), amongst others, who showed how public policies initially designed with the intention to support and promote innovative sustainable food systems, in fact continue to work within the capitalist logic of the food system (Allen and Guthman 2006, Alkon and Mares 2012) through "promulgation of neoliberal discourses of personal responsibility and market-based solutions" (McClintock 2014, p 149).

Moreover, the increasing reliance on public-private partnerships ultimately reflects the ever-changing priorities of funding organizations (McClintock, 2014) and privileges the agendas of those who have been able to "better demonstrate" their "entitlement" to marshal this funding, ultimately leading to self-greenwashing of the urban agricultural practices. Building on this, we observe a second intertwined paradox. As case study based research that currently explores the (agroecological) viability of (peri-)urban market gardeners within a special PAR design of "living-lab", our own research program puts the partners – researchers and neofarmers - in the contradictory situation of studying and contributing to the unfolding of long-term dynamics (develop agroecological practices and strategies for vegetable growing) within a very short-term framework that requires financial solvability of all partners involved.

Focusing on our research approach, we made the hypothesis that the Participatory Action Research process co-designed by our research team gave the farmers the ability to formulate and state underlying aspirations. At this stage, we drafted the primary results of our on-going analysis but it is still too early to know whether we can assume that this process enhanced Cycle Farm's reflexivity and that it brought them to go beyond their usual scope.

Our full paper will enable us to go into several of these aspects in depth and to explore other leads.

## References

- Alaimo, K., et al., 2008. Fruit and vegetable intake among urban community gardeners. *Journal of Nutrition Education and Behavior*, 40 (2), 94–101.
- Allen, P. and Guthman, J., 2006. From "old school" to "farm-to-school": neoliberalization from the ground up. *Agriculture and Human Values*, 23 (4), 401–415.
- Alkon, A.H. and Mares, T., 2012. Food sovereignty in US food movements: radical visions and neo-liberal constraints. *Agriculture and Human Values*, 29 (3), 347–359.
- Altieri, M. A. 1995. *Agroecology: The Science of Sustainable Agriculture*, 2nd ed. Boulder, Colorado, Westview Press.

- Baltazar S., Lambert M., Lewuillon M., Louah L., Maughan N., Richelle L., Rosenfeld N., Van Dyck B., Vankeerberghen A., Visser M., 2017. Can we avoid extractivism while doing research in agroecology? A critical view on co-optation and institutionalisation of agroecology. Conference Paper Agroecology Europe, Nov. 2017
- Bellows, A.C., Brown, K., and Smit, J., 2003. Health benefits of urban agriculture. Venice, CA: Community Food Security Coalition.
- Chatterton, P., Fuller, D. and Routledge, P. (2007). Relating action to activism. Theoretical and methodological reflections. Chapter 25 in ed. Kondon et al. Participatory action research approaches and methods: Connecting people, participation and place. Routledge. Pp 216-222.
- Chevalier J., Buckels D., 2013. Participatory Action Research : Theory and Methods for Engaged Inquiry. Abingdon, Oxon: Routledge.
- Coleman, E. 1995. The new organic grower: A master's manual of tools and techniques for the home and market gardener. 2nd ed., rev, and expanded. White River Junction, VT: Chelsea Green.
- Coleman, E. 2009. The Winter Harvest Handbook: Year-Round Vegetable Production Using Deep-Organic Techniques and Unheated Greenhouses, Photography by Barbara Damrosch, Vermont, USA: Chelsea Green Publishing, ISBN 978-1603580816.
- Dumont A. M., Baret P. V, (forthcoming). From quality of work issues to concerns about social sustainability in agriculture: a comparison between agroecological, organic and conventional vegetable systems.
- Fals-Borda O. (1987). The application of participatory action-research in Latin America. *International sociology*, 2(4), 329-347.
- Fals-Borda O., and Muhammad A.R. 1991. Action and knowledge: breaking the monopoly with participatory action-research.
- Freeman, C., et al., 2012. "My garden is an expression of me": exploring householders' relationships with their gardens. *Journal of Environmental Psychology*, 32 (2), 135–143.
- Fortier, J. M. 2014. The market gardener: A successful grower's handbook for small-scale organic farming. Vancouver, ON: New Society.
- Fukuoka, M. 1992. One-straw revolution: Introduction to natural farming. Mapusa, India: Other India Press.
- Giraldo O.F. & Rosset P.M. 2017. Agroecology as a territory in dispute between institutionality and social movements. *The Journal of Peasant Studies*.
- Gliessman, S. R., (2006). *Agroecology: the ecology of sustainable food systems*. CRC Press: USA.
- Hartman H. 2015. The LEAN farm. How to Minimize Waste, Increase Efficiency, and Maximize Value and Profits with Less Work, Chelsea Green Publishing.
- Holmgren, D., 2002, *Permaculture, principles and pathways beyond sustainability*, Hepburn, Australia, Holmgren design service, 287 p.
- Jevons, J. C. 2001. Biointensive sustainable mini-farming: II. Perspective, principles, techniques and history. *Journal of Sustainable Agriculture* 19(2):65–76.
- Kondon, Sara, Rachel Pain, and Mike Kesby, eds. (2007). *Participatory action research approaches and methods: Connecting people, participation and place*. Routledge.
- Kremer, P. and DeLiberty, T.L., 2011. Local food practices and growing potential: mapping the case of Philadelphia. *Applied Geography*, 31 (4), 1252–1261.
- Lerner, S., 2012. Seattle food action plan. Seattle: City of Seattle Office of Sustainability and Environment.
- Louah, L., Visser, M., Baltazar, S., Delobel, V. (2015). Changements de postures du chercheur, de l'agriculteur et de l'enseignant pour l'innovation agroécologique paysanne. *Pour 2015/2 (N° 226)* : 5-10.
- McClintock, N., Wooten, H., and Brown, A., 2012. Toward a food policy "first step" in Oakland, California: a food policy council's efforts to promote urban agriculture zoning. *Journal of Agriculture, Food Systems, and Community Development*, 2 (4), 15–42.
- McClintock N. 2014. Radical, reformist, and garden-variety neoliberal: coming to terms with urban agriculture's contradictions, *Local Environment: The International Journal of Justice and Sustainability*, 19:2, 147-171, DOI: 10.1080/13549839.2012.752797
- McIntyre. 2008. *Participatory Action Research (PAR)*, Qualitative Research Methods Series, Sage.
- Metcalf, S.S. and Widener, M.J., 2011. Growing Buffalo's capacity for local food: a systems frame- work for sustainable agriculture. *Applied Geography*, 31 (4), 1242–1251.
- Mollison, B., and D. Holmgren. 1981. *Permaculture one: A perennial agriculture for human settlements*. Davis, CA: International Tree Crops Institute.
- Morel K. and Léger, F. (2016). A conceptual framework for alternative farmers' strategic choices : the case of French organic market gardening microfarms in Agroecology and sustainable Food Systems 40 (5) : 466-492.

- Plateau L., Maughan N., Hermesse J., Pipart N., Visser M., Maréchal K., 2017. La durabilité du maraîchage urbain à l'épreuve de l'installation professionnelle : Illustrations de trajectoires bruxelloises. In XXXIIIèmes Journées du développement de l'Association Tiers Monde. Colloque AGRUDEV (Agricultures, ruralités et développement). Université libre de Bruxelles.
- Robinson-O'Brien, R., Story, M., and Heim, S., 2009. Impact of garden-based youth nutrition intervention programs: a review. *Journal of the American Dietetic Association*, 109 (2), 273–280.
- Stassart P. M., Baret Ph., Grégoire J-Cl., Hance Th., Mormont M., Reheul D., Stilmant D., Vanloqueren G., Visser M., 2012. L'agroécologie : trajectoire et potentiel . Pour une transition vers des systèmes alimentaires durables in *Agroécologie. Entre pratiques et sciences sociales*, Educagri, 2012
- Stone C.A. 2015. *The urban farmer: Growing Food for Profit on Leased and Borrowed Land*. New Society Publishers, 14 déc. 2015 - 288 pages.
- Thibert, J., 2012. Making local planning work for urban agriculture in the North American context: a view from the ground. *Journal of Planning Education and Research*, 32 (3), 349–357.
- Tornaghi C. 2014. Critical geography of urban agriculture in *Progress in Human Geography* Vol. 38(4) 551-567.
- van Veenhuizen, R., 2006. *Cities farming for the future: urban agriculture for green and productive cities*. Ottawa: IDRC/RUAF.
- Van der Ploeg J.D., 2008. *The New peasantries: struggles for autonomy and sustainability in an era of Empire and Globalization*. London, Sterling, Earthscan, 356p. ISBN 978-1-84407-558-4
- Van der Ploeg J.D., 2009. Peasant Agriculture. In: *International Encyclopedia of Human Geography* / Kitchin, R, Thrift, N, . - Oxford : Elsevier.
- Verdonck, M., Taymans, M., Chappelle, G., Dartevelle, G., et Zaoui, C., 2012. *Système d'alimentation durable Potentiel d'emplois en Région de Bruxelles-Capitale. Rapport final de la recherche réalisée pour le compte de l'Institut Bruxellois pour la Gestion de l'Environnement*. Bruxelles : Centre d'études régionales bruxelloises, Greenloop S.A. et Observatoire bruxellois de l'emploi.
- Viljoen, A., 2005. *Continuous productive urban landscapes: designing urban agriculture for sustain-able cities*. Oxford: Elsevier.
- Visser, M. 2013. Revisiting Ester Boserup : the agroecology of agrarian change under population pressure. In van Ypersele, Jean-Pascal et Hudon, Marek (eds.), *1er Congrès interdisciplinaire du développement durable*, Namur.
- Wakefield, S., et al., 2007. Growing urban health: community gardening in South-East Toronto. *Health Promotion International*, 22 (2), 92–101.
-

## **Participation in Alternative Food Networks (AFNs): a resource for territorial resilience. The Territorial Agricultural Resilience Index (TARI) for planning**

**Chiara Mazzocchi<sup>1</sup>, Rosalia Filippini<sup>1</sup>, Stefano Corsi<sup>1</sup>,**

<sup>1</sup>University of Milan, Department of Agriculture and Environmental Science

---

### **Introduction**

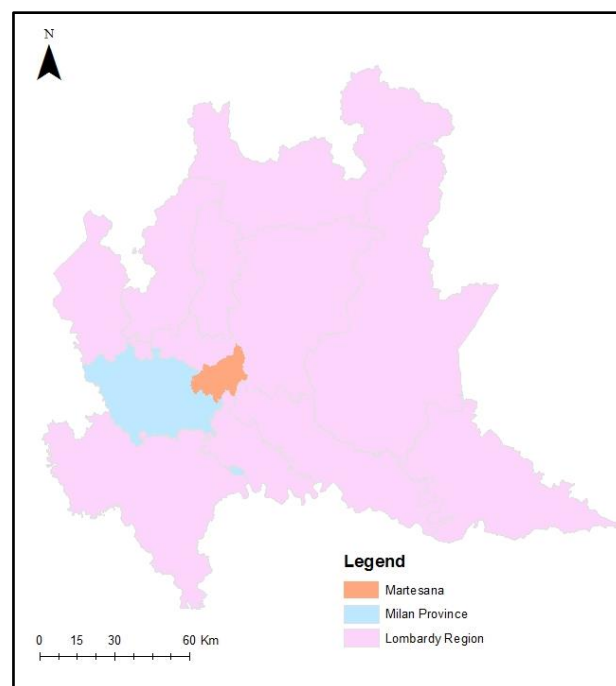
Although the modern industrial food system can feed 6 billion people (Tilman, et al, 2002) and has reduced the population undernourishment at world level, global intensification practices aren't sustainable in terms of social and environmental perspective. Alternative Food Networks (AFNs) may represent alternative to global systems and their issues (Clancy and Ruhf, 2010; Renting et al, 2013). Fostering localism and alternative agricultural practices in urban agro-food systems may represent a strategy and an opportunity to achieve positive externalities in the territory (Monaco et al., 2017) as the resilience of agricultural land (Mazzocchi et al., 2017). That is, a shared participation both of consumers and farmers to AFNs is a resource for improving territory resilience. Moreover, this new perspective may lead to beneficial conditions for strengthening agricultural systems against various events, from food price surge to climate change effects, land use conflicts, and rapid urbanization. In fact, in addition to the function of producing primary goods, agriculture also performs other functions that meet the needs expressed or unexpressed by society (OECD, 2001). Firstly, agriculture has a market-oriented character, which is based on the diversification of agricultural activities to meet the different demands of consumers: didactic farms, agritourisms, the production of specific agri-food goods as Protected Designation of Origin products (Henke et al., 2014). Secondly, agriculture produces other goods and services that, although not remunerated by the market, are required by society and therefore assume characteristics of *public goods* (Mazzocchi et al., 2014). In fact, farmers are the main actors in the maintenance of landscape, soil fertility, biodiversity of a territory (Filippini et al., 2016). Farmers are "*intermediaries*" between ecological-productive and social systems; this explains why the evolution of agricultural sector has been so deeply affected by global and local shocks. The former depends on global dynamics of market, socio-political and environmental development, such as the economic crisis and raw material price volatility, or climate change. Instead, local shocks are linked to territorial development dynamics. In marginal areas, such as mountain and rural zones, there is a growing phenomenon of agriculture abandonment due to, for example, the migration of the population towards more served and rich places (Mazzocchi et al., 2017). In urban and peri-urban areas, building pressure has often led to a decrease in agricultural surface, due to competition for land use between agriculture and the city (Mazzocchi et al., 2014). Here, one of the main factors influencing land use is urban rent, which shows significantly higher values than those of agricultural rent. Other elements threatening agricultural resilience in peri-urban areas are related to the agro-system functionality: a fragmented land tenure structure, a considerable presence of infrastructures in the territory, conflicts between agriculture and urban residential uses. Resilience could be defined as the ability of a system to absorb shocks and rearrange maintaining the same function, structure and identity (Darnhofer, 2010). According to López-Ridaura et al. (2002), resilience is a key element in assessing the sustainability of agricultural systems. As said before, several authors (Aubry and Kebir, 2013; Paül and McKenzie, 2011) argue that one of the essential conditions for agricultural resilience in the metropolitan area is the development of the local agri-food system and networks. Involvement and participation in local markets requires farmers to create new opportunities to try to be "resilient" in the peri-urban territory, exploiting their proximity to the urban market and engaging in valorizing their production (Corsi and Mazzocchi, 2017). The farmer's benefit is generally to value the quality of its products, to obtain a fairer price, to organize the production and supply of products more sustainably for his farm. Consumers' participation to AFNs needs to a greater involvement in buying local products, the knowledge of local agricultural producers and sometimes the willingness to pay a higher price for a given product. Consumers buy products directly from farmers because through AFNs they perceive they can more easily verify product traceability and quality (Monaco et al., 2017), as opposed to what's generally happening in the global distribution system. To date, there is a lack of analysis tool to analyse agricultural resilience of a territory, identifying the factors influencing this permanence. The paper proposes the Territorial Agricultural Resilience Index (TARI), which measures territorial agricultural resilience level, primarily based on

participation degree of consumers and farmers to AFNs. It is applied at a municipal scale adopting Martesana district in the Northern of Italy as case study, placed in one of the most urbanized metropolitan areas of Italy. TARI is based on territorial characteristics of the area, i.e. population density, on farms characteristics, i.e. farmer's age, and on level of consumers' and farmers' participation in AFNs, i.e. farms practicing direct sales. Since each variable act in a positive or negative way on the agricultural resilience, the direction and intensity of their influence have been estimated through a participatory approach involving local stakeholders (farmers, institutions, consumers, associations) in the evaluation of variables influence degree on agricultural resilience. The measurement provided by TARI may be part of the urban and rural territorial planning, being a practical tool suited for the design of land use policies. The results show a very diversified intensity of TARI determined by territorial and agricultural features and different participation pathways to AFNs.

## Methodology

### Case study and data collection

The area of Martesana is in the northeast of Milan Province, comprising 28 municipalities for a total area of 265 sq km, accounting for about 17% of the total area of the Province. The Martesana district is based on a western much more urbanized area contrasting with the eastern section. The eastern area, in fact, is far away from the Milan city core, characterized by lower housing density and higher agricultural presence (Mazzocchi, 2015). The evolution of the agricultural system, strongly linked to the economic and territorial development of the metropolitan area, on the one hand, and encouraged by the CAP, has led to the presence of highly specialized agriculture and linked to the agroindustry chain. The main productions are maize and fodder crops thanks to good water availability.



*Figure 1. Martesana case study localization.*

In recent years, the areas of Eastern Martesana have been invested in major road infrastructure projects, TEEM (Tangenziale Esterna Est Milano) and BreBeMi (Brescia-Bergamo-Milan). In detail, TEEM crosses Martesana affecting about one-third of its municipalities and having a strong impact on the quality of the landscape and on agricultural land consumption of recent years (Salata and Ronchi, 2013).

Database is based on several sources data. It has been used the ISTAT databases, and more in details the VI Census of Agriculture 2010 and the XV Census of Population 2011, and the Industry and Services Census 2012. Moreover, some socio-economic variables have been downloaded by the Lombardy Region Open Data (Table 1). The number of EPGs of Lombardy Region comes from the on-line database



“gasmilano.org” created and updated by the EPGs’ network. FMs’ are been taken from producers’ organizations sites: Coldiretti, CIA and Confagricoltura.

#### The Territorial Agriculture Resilience Index (TARI)

The aim of the Territorial Agriculture Resilience Index (TARI) is classifying municipalities considering their agricultural resilience, defined as the capacity of the farming system to reorganize itself facing environmental, social and economic shocks. In this study, the agricultural resilience capacity is assessed considering three key issues of Martesana territory: farms’ characteristics, socio-economic features of the area, farmers’ and, particularly with consumers’ participation in alternative and local food chains. The TARI is composed by three indicators: the Territorial (TI), the Farm (FI) and the Participatory Indicator (PI). The TI describes the social and environmental context. It includes, for example, the municipality’s population density and the economic importance of the agricultural sector. The FI includes variables related to farms’ technical characteristics, as UAA, economic dimension, organic crops practice. Finally, the PI summarises farmers’ and consumers’ involvement in AFNs, for example participation in farmers’ markets and in Ethical Purchasing Groups (EPGs).

Firstly, a process of normalization has been done to compare variables. The normalization process allows to limit the range of values within a certain series and is necessary when variables have different measure units. Database has been normalized using the rate between the mean value and the standard deviation of each variable. Then, a correlation analysis has been performed to select effective variables avoiding overestimation effect. For each pair of variables, the correlation coefficient (c) has been calculated. When c is greater than 0.6 ( $c \geq 0.6$ ), the two variables are considered high-correlated and one of them must to be removed from the dataset. The final dataset collected 17 variables (Table 1).

Indicator	Variables	Definition	Variable name
Territorial Indicator	Utilised Agricultural Area	UAA (ha) / population (n°)	UAA
	Population Density	Population (n°) / Municipal Total surface (km <sup>2</sup> )	PD
	Economic importance of the farming system	Farms (n°) / total companies (n°)	SET
Farm Indicator	Farms UAA (average)	UAA / Farms in municipality (n°)	A_UAA
	Organic farms	Organic farms (n°)/ Farms in municipality (n°)	ORG
	PGI and PDO farms	POD and PGI farms (n°)/ Farms in municipality (n°)	POD
	Farms with on-farm processing	Farm directly processing products / Farms in municipality (n°)	TRA
	Number of farms with employees	Farms with employee (n°) / Farms in municipality (n°)	JOB
	Farms with owned land	Farms with exclusively land owned (n°) / Farms in municipality (n°)	PRO
	Educational level of farmer	Farms whose farmer has at least a high school diploma (n°) / arms in municipality (n°)	EDU
	Young farmer (<40 years old)	Farms with a young farmer (n°) / Farms in municipality (n°)	ETA
Participatory Indicator	Farmers’ Markets	Farmers’ Markets (n°)/ population (n°)	FMS

	Agritourisms	Agritourisms (n°)/ population (n°)	AGR
	Didactic farms	Didactic farms (n°) / population (n°)	FD
	On-farm direct sale	Farms with on-farm direct sale (n°) / population (n°)	DS
	Farms with online sale	Farms with on-line sale (n°) / population (n°)	ONL
	Ethical Purchasing Groups	EPGs (n°) / population (n°)	EPG

Table 1. TARI variables description

Each variable may positively or negatively influence agricultural resilience of the territory, with a specific intensity. Using a participatory approach, a weighting process has been carried on, to better detect every variable impact on resilience.

In fact, the literature highlights as especially in peri-urban areas the involvement of different local public and private stakeholders in planning process may allow an effective recognition of the issues between urban and agricultural system, comprehending different competences and perspectives (Vandermeulen and Van Huylenbroeck, 2008). Assuming the agricultural system resilience as a process depending on the local economic, social and environmental features, local stakeholders' opinion permits the right weight to be given to resilience factors, since they are the best experts of their territory. In this way, innovative and bottom-up solutions that better read the agricultural adaptation process (Colucci, 2012) are proposed to promote the resilience of a territory.

In the study, the participatory process of weighting has involved 14 actors if the Martesana area: municipalities functionaries, private association involved in food planning and community supported agriculture process, farmers and researchers, school educators and teachers, NGOs with food educational projects.

The weighting method used in this study is the *pairwise comparison method* (Abildtrup et al., 2006). It is composed by two steps. In the first one, for each pair variables the stakeholders were asked to specify which one is the most important in impacting the agricultural resilience in relation to the second variable, assigning it a score between 1 (low) and 6 (high).

Actors must specify the versus of the variable (positive or negative). If the two variables were considered equally influencing resilience, the score 1 was assigned to both the two.

In the second step, scores gained by each variable were summed up. The variable with the higher score was used as the benchmark. The other scores were divided by it, to obtain a coefficient, while the most important variable has a coefficient of 1. Such coefficients represent the final weight for each variable, and were multiplied by the variables values in the database.

Finally, the TARI has been obtained by summing up the three weighted indicators. Since the number of the variables for each indicator is different, the amount of each indicator has been divided by the number of variables, following (1):

$$IndA_{b,i} = \frac{\sum_{t=1}^m V_{t,i} * c_t}{m} \quad (1)$$

Where  $IndA_{b,i}$  is the indicator ( $b$ ) for the municipality ( $i$ );  $\sum_{t=1}^m V_{t,i} * c$  is the result of the sum up of all the values ( $V$ ) of the variables ( $t$ ) multiplied for their weight ( $c_t$ ), divided to the number of variables ( $m$ ). In this way, the TRI for each Municipality ( $i$ ) is the sum up of the three Indicators  $IndA_{b,i}$ .

$$R_i = \sum_{t=1}^m IndA_{b,i} \quad (2)$$

Such formula results the TARI for every Martesana's municipality, obtaining a TARI map (Figure 2).

## Results and discussion

### Weighting

Results of the participatory weighting process for indicators and variables are reported below (Table 2). Among the variables composing the TI, the stakeholders have assigned a higher weight to the economic importance of the agriculture respect other economic sectors (SET). According to the stakeholders, if farms are placed in an area with a high farms concentration respect other kind of economic activity (industry, tertiary services, etc.) it is more likely that farming will be maintained.

Indicator	Variable name	Weighting value
TI	PD	0.39
	UAA	0.57
	SET	1.00
FI	A_UAA	0.40
	JOB	0.59
	POD	0.65
	PRO	0.70
	TRA	0.73
	EDU	0.80
	ORG	0.87
	ETA	1.00
PI	AGR	0.26
	ONL	0.31
	FD	0.68
	FMS	0.86
	EPG	0.92
	DS	1.00

*Table 2. Weighting value of each variable in the Indicators (relative value, benchmark=1.00)*

In the FI, the farmers' age is considered the most important variable (Table 2). Also, the presence of organic production (ORG), and well-educated farmers (EDU) and the presence of on-farm processing (TRA). The least important variables are the presence of employees (JOB) and the size of the farm (A\_UAA). Results suggest the resilience depend more on the farm's diversification and innovation than on farm's structural characters. This means that FI rewards the farms' capacity to innovate and therefore good structural farm characteristics lead to a stronger agricultural resilience intensity.

The stakeholders have assigned a higher weight to on-farm direct sale (DS) among the other variables in the PI followed by the involvement degree to EPGs (EPG) and the Farmers' Market (FM). Other activities more connected with the agriculture multifunctionality, as agritourism (AGR) or educational farm (FD) are considered less important in improving resilience in Martesana. The PI values the shortening of food chains with direct sales, that may help agriculture resilience more than the broadening of agriculture to recreational services, as didactic farms or agritourisms. A considerable importance assumes the direct sale, and less the online sale (ONL), the first requiring a direct contact between farmers and consumers. Among the three indicators (Fig.6), the most important is the PI (51%), followed by the TI (25%), and finally by the FI (24%). So, it could be affirmed that the shortening of food chain and the creation of local food networks seems to be the main characteristic of a resilient agriculture.

#### TARI

More in detail the TARI map of Martesana has been produced (Figure 2).

The least resilient municipalities are in IV and III class. Some of them are near to the city of Milan and show a high population density as Pioltello, Vimodrone and Carugate, but they also have few innovative farms (Grezzago, Trezzano Rosa) and a little participation of farmers and consumers to local agricultural system development.

The municipalities in Class II, show very good values of consumers and farmers' participation in local AFNs, and favourable territorial characteristics or an agricultural system with farmers addressed to agricultural diversification or innovation.

The Class I includes the municipalities in which innovation and diversification enter in the development strategies chosen by farmers, as recreational and agritourist activity, but particularly direct sale and strict economic relationships with EPGs. As an example, Cernusco s/N, Cassina De' Pecchi, despite their proximity to Milan city centre and the presence of important infrastructures are included in Class I. The dynamism of short food chains and thus the participation in local agri-food systems allows other municipalities to be classify in the first Class, mainly thanks to the participation of consumers in local chains through EPGs and farmers' markets (Pessano c/B and Gorgonzola).

The TARI makes possible to understand where institutions can act to implement the local agri-food networks building and fortify the participation of civil society in the agricultural system resilience.

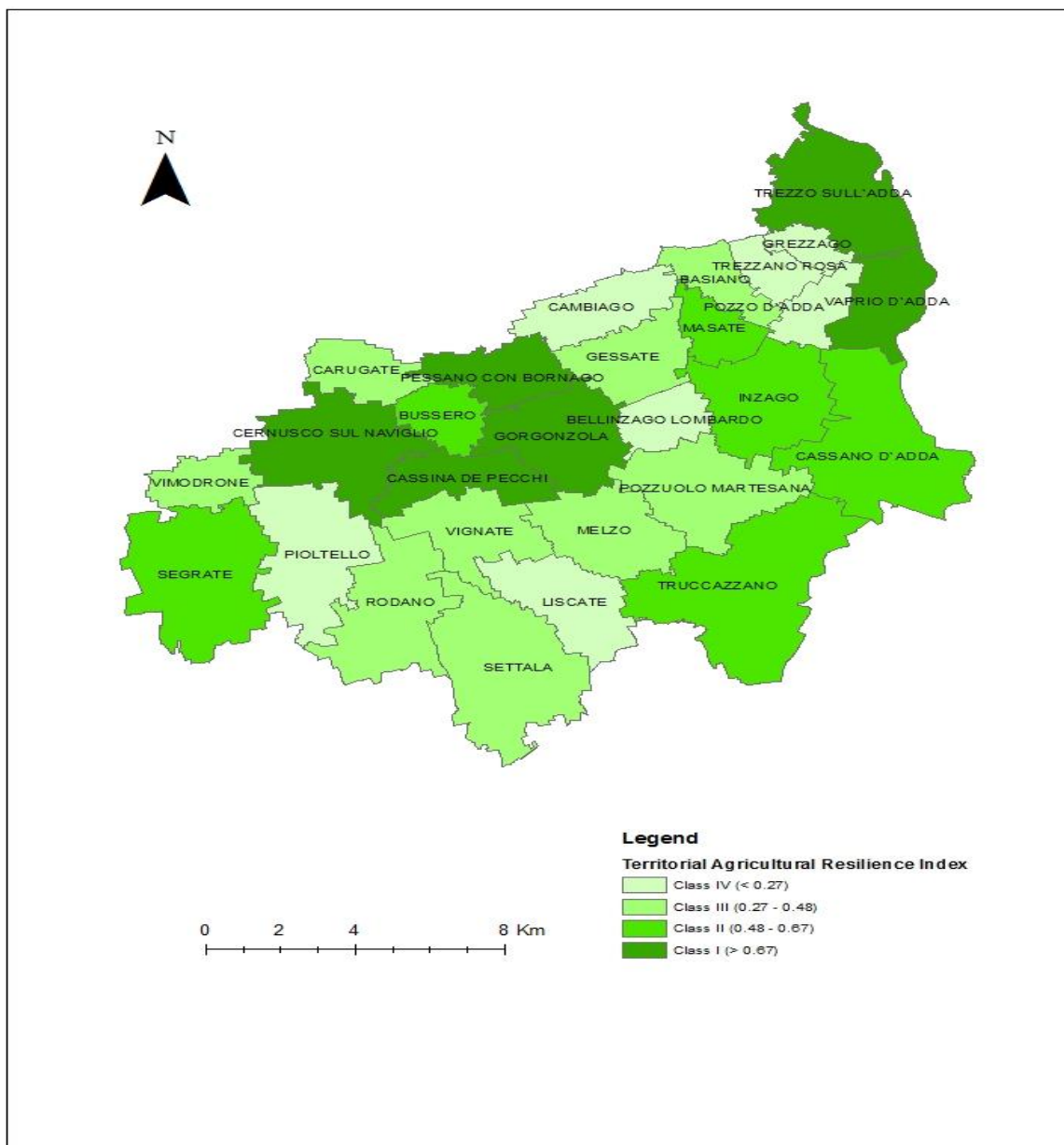


Figure 2. Territorial Agricultural Resilience Index, Martesana map.

## Conclusions

Agricultural resilience allows to preserve soils and has important social functions to maintain the territory traditions and educates to respect for the environment and animals. This research aims to design a tool for analysing agricultural resilience to better address sustainable urban policy and planning. The TARI resulting by the sum of the three indicators. In this sense, the results reflect the importance given by the weighting process to each one of the three. The participatory weighting process gives a bigger importance to the PI in influencing agricultural resilience in Martesana. Effectively, as highlighted in the introduction paragraph, a shared participation both of consumers and farmers to AFNs is a resource for improving territory resilience, as resulting by actors' involvement in the weighting process. Thanks to participatory weighting process involving local stakeholders, a trans-sectoral perspective has been applied (Thompson Klein, 2004). Moreover, in peri-urban areas, the involvement of local actors would better understand the adaptation of the agricultural system to the urban one, revealing all the possible links between urban and agricultural systems (Gonçalves et al., 2017), as well as giving policy makers more precise indications to foster territorial development (Vandermeulen and Van Huylenbroeck, 2008). According to the literature, the involvement of local stakeholders contributes to make them reflect on the dynamics of their own territory and to allow the search results to be more easily applied (Binder et al., 2010; Thompson Klein, 2004; Vandermeulen and Van Huylenbroeck, 2008).

## References

- Binder, C.R., Feola, G., Steinberger, J.K. (2010). Considering the normative, systemic and procedural dimensions in indicator-based sustainability assessments in agriculture. *Environmental Impact Assessment Review* 30, 71–81.
- Clancy, K., and Ruhf, K. (2010). Is local enough? Some arguments for regional food systems. *Choices*, 25(1).
- Colucci, A. (2012). Le città resilienti: approcci e strategie. Disponibile su: [http://www.jeanmonnet-pv.it/Jean\\_Monnet\\_Centre\\_of\\_Excellence/publications\\_files/full\\_txt\\_colucci\\_jm.pdf](http://www.jeanmonnet-pv.it/Jean_Monnet_Centre_of_Excellence/publications_files/full_txt_colucci_jm.pdf)
- Corsi S. and Mazzocchi C. (2017). The Alternative Food Networks (AFNs) choice: determinants for consumers' and farmers' participation, *Biobased and Applied Economics* (in press).
- Darnhofer, I. (2010). Strategies of family farms to strengthen their resilience. *Environmental Policy and Governance* 20, 212–222.
- Gonçalves, J., Gomes, M.C., Ezequiel, S., Moreira, F., Loupa-Ramos, I. (2017). Differentiating peri-urban areas: A transdisciplinary approach towards a typology. *Land Use Policy* 63, 331–341.
- Henke R., Povellato A., Vanni F. (2014). Elementi di multifunzionalità nell'agricoltura italiana: una lettura dei dati del censimento, *QA Rivista dell'Associazione Rossi-Doria*, 1, 101-133.
- ISTAT (2011). Data warehouse 6° Censimento Nazionale dell'Agricoltura. <http://dati-censimentoagricoltura.istat.it/Index.aspx>
- ISTAT (2012). Data warehouse 15° Censimento generale della popolazione e delle abitazioni. <http://dati-censimentopopolazione.istat.it/Index.aspx>
- ISTAT (2013). Data warehouse 9° Censimento Nazionale dell'Industria e Servizi. <http://dati-censimentoindustriaeservizi.istat.it/Index.aspx>
- Mazzocchi, C., Corsi, S. and Sali, G. (2017). Agricultural Land Consumption in Periurban Areas: a Methodological Approach for Risk Assessment Using Artificial Neural Networks and Spatial Correlation in Northern Italy, *Applied Spatial Analysis and Policy* 10: 3-20.
- Mazzocchi C. (2015). Un progetto locale, verso il Martesana Food Council, in *Verso la Costituzione del Martesana Food Council, generazione di nuove politiche del cibo, integrate e partecipative*, AAVV. Ed. Hungry for Rights Martesana, Milano.
- Mazzocchi C., Sali G., Corsi S. (2014). Analisi della fragilità del contesto agricolo in area periurbana: uno strumento per il governo del territorio. *Italian Journal of Regional Science*, Franco Angeli, Milano.
- Monaco F., Zasada I., Wascher D., Glavan M., Pintar M., Schmutz U., Mazzocchi C., Corsi S., and Sali G. (2017). Food Production and Consumption: City Regions between Localism, Agricultural Land Displacement, and Economic Competitiveness. *Sustainability*, 9 (1), 1096.
- Renting, H., T.K. Marsden, and J. Banks (2003) Understanding Alternative Food Networks: Exploring the Role of Short Food Supply Chains in Rural Development. *Environment and Planning A*, 35(3): 393-411.
- Rete G.A.S di Milano. <http://www.gasmilano.org/index.php>

Salata, S. and Ronchi, S. (2013). Nota Centro di Ricerca sul Consumo di Suolo per effetto delle nuove infrastrutture lombarde. Available at <http://consumosuolo.org/2013/12/il-consumo-di-suolo-per-effettodelle-nuove-infrastrutture-lombarde/>

Thompson Klein, J. (2004). Prospects for transdisciplinarity. *Futures* 36, 515–526.

Tilman, D., Cassman, K. G., Matson, P. A., Naylor, R., and Polasky, S. (2002). Agricultural sustainability and intensive production practices. *Nature*, 418, 671–677.

Vandermeulen, V., & Van Huylenbroeck, G. (2008). Designing trans-disciplinary research to support policy formulation for sustainable agricultural development. *Ecological Economics* 67, 352–361.

---

# Corporeal Encounters with farmscapes - curating an embodied methodology for ecological urban-making

Anna Maria Orrù

Chalmers University of Technology, Sweden

Email: orru@chalmers.se

---

## Abstract

The past decade has produced a thriving archive of urban farming examples and enthusiastic urban inhabitants implementing food gardening in the Global North. Despite all collected knowledge and skills, there still exists a distance between awareness and more extensive committed action. This slow uptake calls for furthering the boundary of alternate methods in urban-making in which artistic research can expand spatial imaginations that trigger experiential ecological awareness and becoming. This paper explores methods which aim to traverse this gap by employing the body as a main tool of inquiry. How can we enable and set up modes of curiosity-driven encounters that activate ecological awareness and imaginaries which transform into a methodology for exploring new delicious urban fictions to live by?

In using artistic research approaches, there is potential to encounter urban food issues by setting up different spatial relations with nature in the city that activate deeper commitments to the environment and go beyond local food movements and surface tactility. An underlying experiential 'thickness' exists in the corporeal-to-space relation that needs exploration as it can motivate an ecological place attachment to these farmscapes that flies under practice and theory radars. This paper presents the case study 'Organoleptic Interfaces' to exemplify three modes of inquiry through its interfaces. The first mode, 'Paperscapes', includes a making-knowledge workshop delving into Masanobu Fukuoka's natural farming theory. A second methodology utilizes performance to disseminate such knowledge to a wider unassuming audience. The third approach deepens the visceral practice with a Butoh choreography workshop exploring embodied and sensorial understandings of ecological practice. The case is accompanied by a short film essay that is appended to this paper.

Results include an assortment of reformulated embodied methodologies for curating a corporeal politics and poetics in ecological urban-making around farmscapes, and an extended curiosity that has potential to reach wider urban audiences. Artistic research has the ability to stage surprises and an awareness that might not be found with normative practice and theory. We eat daily and the body is a fundamental untapped resource in the way that we live in and treat urban contexts.

## Introduction

The past decade has produced a thriving archive of urban farming examples and enthusiastic urban inhabitants implementing food gardening in the Global North. Though the task has been taken up by enthusiastic individuals who continue to develop their know-how and skills, inspire others to join in, and have transformed planning municipalities to partake in supporting such spaces in the city, there is still an existential gap between awareness and more extensive committed action. This paper explores how this gap can be explored through furthering the boundary of alternative methods in urban-making in which artistic research is employed to expand spatial imagination that could trigger deeper commitments, experiential ecological awareness and transformative devoted action. The methods employed lean on the corporeal, on harnessing embodied methods to traverse this gap and use of the body as a main mode of inquiry.

The explorations set up three modes of embodied encounter with different spatial relations with nature that go beyond local food movements and surface tactility. The case study under the title of *Organoleptic Interfaces* exemplifies three modes of artistic research inquiry.<sup>1</sup> The first interface is called 'paperscapes', and looks into the method of knowledge-making using Masanobu Fukuoka's natural farming philosophy. The second interface uses performance as a further exploration and dissemination of knowledge contexts and corporeal investigation. The third interface takes on a deeper visceral and intimate practice using Butoh choreography, a Japanese dance art form, to discover embodied understandings of an ecological practice with space and nature.

---

<sup>1</sup> The case is accompanied by a short film essay that is appended to this paper. Briefly defined, organoleptic refers to the ability to stimulate the senses.

Each interface instigates the 'pleasures' of sustainability in and through the body for harnessing a deepened knowledge, attention and motivation to nature and urban gardening. In this simple and satisfying act of hands immersed in the soil, I come to realise that my body has greater agency when I garden because I participate in the making of space. Through this act, I develop a reformed relationship to the space simply through the gesture of dipping hand into soil, through contact, and by using my body. I want to contemplate why gardening is important for encouraging an ecological ethics in urban space, and how to explore this ethic-making besides gardening but through using the body in other methods such as making, performing and training choreography. After all, not everybody wants to garden, but everybody does have a form of contact with space. In this dynamic rapport, the questions is how to enable and set up modes of curiosity-driven encounters that activate ecological awareness and imaginaries which transform into a methodology for exploring new delicious urban fictions to live by? This contemplation stems from alternate forms of spatial practice rooted in critical feminist spatial practice that concentrates on the body and not only on the activity of growing. It is a deeper look at the agency of the human body in this act of urban-making and its relation to other human and non-human entities. Carolyn Steel underpins a necessity for an alternative approach to food issues, 'the scale and complexity of the task demands a broadening of the architectural and planning discourse to embrace fields not traditionally considered relevant. New tools are needed, both in order to comprehend the issues at hand, and to make effective use of the creative capacity of spatial imagination' (Steel 2012, p. 37). An artistic research approach can imaginatively stage embodied approaches for studying the relation between body, food and urban-making, not only to deal with the complexity but also to seed behavioural agency of place attachment and environmental identity.

### **Core challenges**

Growing food in the city is a critical method for maintaining a relation to nature on an everyday basis. Coming in contact with this simple act, gestures for a new relation between a body with the urban space, and with vibrant matter – human and non-human. Growing food provides encounters with the ground, to various seasons, and with our own body and other bodies. Hence, food takes on several roles; as intervention, as a relational material and a relation builder between species (non-humans and humans), as an urban nature, and as a relation between natures. Food feeds, fends, formulates, gathers. It allows us to spend time together, and alone. Building relations to each other, ourselves (our and other bodies), the culture we live in, and the land we live off. If we permit it to, food is also a symptom of emotion, a state of mind, a state of place and in many instances an indicator of the human condition. As such, it is an urban interface which needs careful consideration. With gardening, comes a growing sense of seasons and food availability, but it is important to consider that not everybody wants to garden. Therefore, these questions on embodiment need to be examined through diverse encounters with urban space.

In addressing challenges associated with growing food in the city, I have focused on a few that require deeper investigation, knowledge production and research practices. Though there is all collected knowledge and skills that has come about in the last decade, even a trend in some capital Global North cities, there still exists a distance between responsiveness and more extensive committed action around the issue of growing food in the city. I argue that this slow uptake calls for furthering the boundary of alternate methods in urban-making in which artistic research can expand spatial creativities especially around the realm of public space making that trigger experiential ecological awareness and transformation. The challenge is not the quantity of food that needs to be produced in the city, but what spatial immersions could trigger a change in behaviour? Food can be a powerful shaper of urban space and lifestyles, and the experience of foodscapes has an embodied effect on environmental enactment and place attachment. The question in my research is how to enable and explore these effects by means of the corporeal?

The challenge remains to develop a set of alternate methods to incite environmental behaviour and motivation, and in turn to setup environmental identities that tie to space, land, nature and all matter (human and non-human) which nurture modes of ecological living and a deeper understanding. On a daily basis, we are ignorant of food's highly complex chain of effects in terms of the resources it requires. Transparency is necessary, as well as a scaled-down, contactable and more environmentally-sound approach. One suggested solution has been the local food movement which 'focuses on reconnecting



people to their food supply and reinvigorating the values (and relationships) inherent in community through the production, purchase, and consumption of local food' (Delind 2006, p. 123). However, this approach still defines food as an economic enterprise, setting up a relation based on food as commodity and as Delind points out, 'Without engagement or some other embedded memory, food easily assumes the role of a "thing" –something quite separate from the living system that produced it and resides within it' (Delind 2006, p. 125). There is a need for an embodied approach that participates more dynamically with foodscapes.

*'If local food (however local is defined), represents little more than another delightful, and possibly guilt assuaging, choice made by people who see themselves as wise consumers, then it will not withstand market forces. Without an emotional, a spiritual, and a physical glue to create loyalty, not to a product, but to layered sets of embodied relationships, local will have no holding power...What are needed are ways of thinking and feeling about local food that cannot be easily appropriated and/or disappeared by the reductionist rationality of the marketplace and that can balance and reframe an economic orientation with more ecological and cultural understandings of people in place' (Delind 2006, p. 125-126).*

Hence, the approach must be a recognizable experience on a bodily and tactile level and one that does not continue to be underpinned through consumer practices only. Delind asserts that linking place to bodily contact includes the act of also eating a native diet which has shown to have numerous benefits. She outlines that the local experience has capacity for both an internal and external corporeal affect, 'Local food, it would seem, is us in ways that we may not have fully considered' (Delind 2006, p. 133). This is interesting to consider in terms of how transformative behaviour is not only an external endeavour, but also an internal one which requires deeper forms of practice. Delind's view of the space-food-body connect has extended the notion of this local to then also occur on a metabolic level. The metabolic level is the closest 'space' to us, beckoning a relation to an alternate food placement. Thinking of space in terms of an extending both inside and outside starts to create a relation to nature from alternate perspectives. Delind (2006, p. 142-143) emphasizes that making people better consumers and producers is not enough, she suggests that there is a need to 'find ways to stretch our experiences and sensibilities to a point where "the local" as food, as farmland, as the culture and ecology of real places starts to "be" us and define us wherever we are. We need to move beyond the creation of lifestyles through consumption and challenge ourselves to create places through acts of physical engagement and cultural identification.' Broadening practices and consciousness suggests setting up modes of bodily encounters that develop environmental imaginations using curiosity and exploring new ways of experiencing and living in the city. I argue that these imaginations refine a deeper awareness not just connected to a consumeristic model and that they practice diverse modes of research that help bring forward new forms of becoming and being in space, and eventually, a different understanding of spatial agency.

Furthermore, the time body space aspect is important to consider when approaching such spaces in the public realm as they deter away from more normative forms of spending time in the urban landscape such as shopping. Contact with reminders of seasonal produce can become indicators of food cycles still need for more engaged experience beyond the visual queue of time. The spatio-temporal presence of urban agriculture can serve as a catalyst for a renewed relation to nature in cities, it can be imagined as a vibrant nature we relate to on a metabolic and physical level. The challenge is to create an awareness for reformulated food behaviour beyond dietary choices and explore how space can generate a connect to nature through seasonal experiences and sequences of activity. One such approach is through tactility and its association with the sensorial, and to developing the 'human' body as a mode of embodied methodology as a form of materiality.

It is important to bring up an important theoretical underpinning which also results from deeper embodied modes of research, and this is in line with political scientist Jane Bennett's logic of an extended relation to a vibrant materiality which encompasses 'artifacts, metals, berries, electricity, stem cells, and worms' (Bennett 2010, p. 123). Therefore, it is not just a thing or body, it also is the performative act of the matter as well – or thing power as Bennett dubs it. She also alludes to it as thing-

power materialism which starts to build up the idea of being in a relation in nature, or more so, a type of kinship linked to an ethics of agency with space. Bennett writes,

*'Thing-power materialism offers a contestable but, I think, auspicious account of how it is that things have the power to move humans... It emphasizes the shared material basis, the kinship, of all things, regardless of their status as human, animal, vegetable, or mineral. It does not deny that there are differences between human and nonhuman, though it strives to describe them without succumbing to the temptation to place humans at the ontological centre. One way to do so is to distinguish humans as things composed of a particularly rich and complex collection of materiality' (Bennett 2004, p. 359).*

Such perspectives, encourages a more sensible, dynamic and critical engagement with matter, and thus with nature especially in gardening, because it takes the act and process into consideration. In this reformulation of nature, we must relearn what it is to be an ecological human through agencement and relational becoming. Through collaborating with vibrant matters and materialities from alternate perspectives such as making-thinking and Butoh choreography in this paper's suggested methodologies, there is a greater chance in cultivating responsibility. Jane Bennett illustrates with her theory on vibrant matter that urban gardens need to be profoundly discovered to see that they include waste compost, people, water irrigation, seeds, tools – all the ingredients that go into growing food. In viewing all the underlining assemblages inherent to such a space, we begin to understand the vital link it has to living systems and its larger role. It is this contact with an unexpected service in the city that creates a direct observation of how complex is the action of food arriving at the table for nourishment. If the visual aspect of vibrant matter can enforce environmental awareness – what can this mean in terms of the garden aesthetic or experiential in which the triggers are sensorial and embodied? Carolan warns that, 'admittedly, the implications of an embodied politics must eventually reach to the roots of our lifestyle and not stop with a mere tidying up on the surfaces' (Carolan 2009, p.12). In order for this to occur, spatial methodologies need to be explored that reach beyond the surface outside and extend inwards into the behavioural landscape inside each gardening body or body that passes by.

### **Curating a corporeal poetics**

It is obvious that we too are nature, but then there is a gap where we do not behave as if we are a part of nature. To be ecological, is to understand that we are part of a larger assemblage of relations, that we participate in a collectivity of human and non-human bodies and that this entanglement with matter brings with it certain joys or dangers, but in either way it can inspire us to behave differently. Sociologist Michael S. Carolan highlights this gap as a distance between awareness and the act to do something about it. Collapsing this distance involves generating a deeper commitment to the environment through alternate bodily methodologies. Carolan (2007) suggests tactility as one approach but there is little research dedicated to practices of exploring tactility in terms of gardening other than the obvious experience of immersing hands into soil. This research gap into tactility is also highlighted by biologist Lucy E. Keniger (et. al 2014 p. 930) who points out the potentials of finding modes of interacting with nature. She suggests questions for further research which define the spatial setting in this paper;

*'What characteristics of natural settings (e.g., biodiversity, level of disturbance, proximity, accessibility) are important for triggering a beneficial interaction? How do these characteristics vary in importance between different cultures, geographic regions and socio-economic groups? These are important directions for future research if we are to make effective, informed decisions regarding the best ways to maximise opportunities for people to interact with nature in a rapidly urbanising world.'*

These interactions are supported by the link between place attachment and pro-environmental behaviour. Research on place attachment identifies that 'Although one's connections to a place may influence pro-environmental behaviour, the dearth of evidence on this topic means that definitive conclusions are difficult to draw [...] what is known about the relation between place attachment and actual pro-environmental behaviour?' (Scannell & Gifford 2010, p. 290). Scannell and Gifford claim that

an 'environmental identity' is formed in regards to space. This paper investigates what spatial methodologies and conditions could curate conditions for this? Research is needed to study ways in which place attachment could be inspired as there is a need for creating new methodologies and encounters for intervening with foodscapes and exploring ways to activate pro-environmental imagination and performativity in the public realm. Carolan (2009, p. 2) proposes that embodied approaches could be a mode of generating attachments. Such approaches are seen as a 'corporeal poetics of everyday life,' he states,

*'approaching understandings of nature from this direction, from the angle of embodiment, reveals important insights that would otherwise fly below our theoretical radar. For example, if nature is shaped by our doings – that is, if it is an embodied effect – then what 'natures' are possible (or probable) become constrained by the embodiments available to a society... Experience and bodily practice cannot be divorced from one another. In other words, what we see (and hear, smell, taste and touch) is shaped by our doings.'*

This is fundamental to why an embodied approach and relation with urban nature is meaningful and vital. The research intent has been to intervene in the poetics of everyday by bringing embodiment, imagination and a certain eco-playfulness into urban-making practice. If 'bodies dwell with differing degrees of attachment to the natural world (Carolan 2009, p. 9)' then 'a change in style (lifestyle) implies the creation of new embodied actions, stories, and 'being'-in-the-world, from which will spring forth new intelligibilities toward nature... ultimately, the goal of an embodied environmental politics is to bring people back into a sensuous kinship with the natural world – in their travel, play, work and rest – so this world can again be experienced from within' the everyday' (Carolan 2009, p. 12-13). Carolan suggests the use of the body to achieve this, 'if we think with our bodies then we must think about nature with our bodies too [...] It is time to nurture alternative ways to know, recognize and understand nature. And where better to begin than with the body' (Carolan 2009, p. 14).

### **A method for organoleptic interfaces**

Organoleptic interfaces is a case study that uses a three-fold approach to knowledge practices using the body as a mode of enquiry. Each mode produces different spatial encounters and relations to a nature and essentially a gardenscape. These modes fall under the realm of artistic research and a keen sense to provide alternate modes for embodied research in urban gardening. The first interface is called 'paperscapes' which looks into the method of knowledge-making using Masanobu Fukuoka's natural farming philosophy. The second interface uses performance as further exploration and dissemination of knowledge contexts and corporeal investigation. The third interface takes on a deeper visceral and intimate practice using Butoh choreography, a Japanese dance art form, to discover embodied understandings of an ecological practice with space and nature. The artistic research approaches explore an embodied methodology and materialism – from tactility to senses, from immersion to creative engagement, from imagining to making collectively, and also through performance. Dyrssen (2015, p. 25) speaks of artistic research within the academic framework,

*'In today's knowledge society, artistic endeavours and forms of communication play an active and necessary role in critically examining contemporary phenomena through practice-related perspectives and capacity for re-interpretation. Artistic research and artistic practice contribute to innovative forms of expression, cultural output, critical examination of and new thinking on issues such as democracy, the development of industries and services, globalization, and not least issues touching on values, quality, learning, and processes of knowledge and innovation.'*

These relations are activated by doing, making, performing, imagining and training the body, and in return space is reformulated by investigating its diverse relations. The methodological strategy has been to use the body in different events in relation to space, and in relation to nature.

## Interface 1 - Paperscapes

Paperscapes (figure 1) is an 'imaginable farming' workshop to bring the element of foodscapes into a thinkingmaking position - both as a making intervention and a thinking through the scientific text. The entrance into the workshop is through Masanobu Fukuoka's world via small fragments of his texts for his natural farming philosophy, primarily taken from his book 'One Straw Revolution.'<sup>2</sup> In Paperscapes, the attempt is to take his texts and model them into a paper sculpture stage that will be used for the Butoh performance in the second interface afterwards. Nel Janssens refers to this type of knowledge transformation as a poetic expression in which 'This relation between imagination and reality is linked to the relation between expression and perception' (Janssens 2012, p. 86). This act of taking knowledge acquired from text and molding it into a spatial experience is a form of deepened knowledge practice. Social anthropologist Trevor H.J. Marchand investigates this mode of knowledge where learning, situated practice and embodied cognition manifest human knowledge which exceeds language and is usually transferred through bodily and perceptual practice (Marchand 2010, p. xi). He is interested in how the different domains of knowledge can be transferred from the mind to the body. The body is seen as a learning and practicing medium based on activity and repetitive practice, which allows for the knowledge to enter into an acted perception and not just into thought.

The paperscapes workshop invited 30 Chalmers University students to model Fukuoka's texts. The students self-organised with minimal instruction, given the handed-out text to read and rolls of trace. They divided themselves into three groups representing different physical boundaries of a natural farm space: air, ground and edge conditions and proceeded to form an embodied three-dimensional understanding of the text. But here already, there is an inherent tacit knowledge that rests in the body; the knowledge of touching soil, and of the medium's air, wind, and weather. Every student already recognizes these properties, so the added imaginary leap to understanding natural farming is not so far. Tim Ingold views this tacit knowledge as the 'surface of our life-world', he believes that such knowing 'carries the intent of creating a hard boundary between what lies below and above, and metaphorically between the material and the mental' (Ingold cited in Marchand 2010, p. 15-16). In addition to the text, I gave the students keywords for surface materials which indicated seasonality: Autumn - leaves, crunchy, freshly fallen off, puddles, wetness, transition, decay. Winter - snow, slush, fresh snow, ice, soil frozen, slippery, cold, covered ground. Spring | Summer - fresh plant, seed, mist, droplets, flowers, fresh soil, mud, moss, fruit, vegetables, drought. Keywords, a type of metaphor, are important exercise materials both in this interface and the following two. Metaphors are a mode of fiction-staging that motivate a body to imagine and be curious and the following interface takes this fictional approach to another level. In paperscapes, the body was engaged in the modelling of a fictional garden space in order to understand the scientific construct. In the next interface, the corporeal practice is put into another fictional construct by using Butoh Choreography as a mode of inquiry through performance. The body this time is asked to enact the fictional stage, in essence a fictional experience of Fukuoka's philosophy on natural farming. Briefly, Butoh choreography is a form of dance expression from Japan. The founders of the Butoh dance were Ohno Kazuo (1906-2010) and Hijikata Tatsumi (1928-1986). Body practice in Butoh has an aim to make the body especially aware and engaged with space by practicing to develop a state of high alertness and reflection for a different type of manoeuvring through a given space.

---

<sup>2</sup> Masanobu Fukuoka, born in Japan in 1913, first studied microbiology, later specializing in the study of soil and plant diseases. His strenuous study into the world of bacteria brought him to physical and mental collapse. With his recovery came a lifetime change, the shift towards developing a method of farming he called 'Natural Farming.' Fukuoka (1978) created the method sometimes referred to as 'do-nothing farming', because it relies on nature to do the work, similar to contemporary farming practices of permaculture.



*Figure 1 – The making of Paperscapes*

### **Interface 2 – Butoh performance**

In Butoh choreography, the novel learner is often blindfolded to remove their hierarchic sense of vision, which creates a reliance on using all other senses to navigate through space and an awkward reshuffling of senses usually occurs. As the performer, Butoh dancer Frauke has already trained to use all her senses to manoeuvre space when performing (figure 2). The ambition with Butoh is to activate the voids around the body and thereby seeking to know the world through the body. The dancer must therefore erase their social body to become a vessel for crafting all kinds of relations with the surrounding space. Butoh's dynamism is not about speed – it is a slow medium used to explore an alternate understanding of space through the body.

The performance comes as a fictional mimesis by re-enacting inside the farmed paperscape. The students who constructed the stage, the performer entering the space, and each member of the audience have their own interpretation of the staged script. The task is unrehearsed and spontaneous. I have asked Frauke to perform in the paper-crafted space for a 40-minute performance. She enters the space for the first time as she had not been present for the making of the paperscapes stage. This was very intentional as I wanted her to have a raw performance, free from previous prejudices and rehearsals to see what the sculpted space would do to her dance form. The sound installation by Derek Gripper (2014), written for natural farmer Masanobu Fukuoka, is performed in the same instance weaved together with the paperscape. Both the body movements and the music have material properties and interfaces that interact with this sculpted farm. The space has become a multiplicity of interfaces, the room has changed.

The Butoh performance is intended to bring a body in dialogue with these various materialities. The space is negotiated as a form of communication, whereas space prompts the body and the body animates the space. The interfaces overlap with the body responding and activating it. These are interfaces in between the real and the imagined worlds - a staged fiction, a paper world. The performance places Frauke's body in negotiation with space, with time, and with edible matter tendencies – though not edible at all as it is paper. In her Butoh form, Frauke activates the voids around her body to get to know the constructed world through her body. Her senses are her measuring devices for this embodied engagement. I want to mention briefly, Butoh dance is not a preconceived

choreography. A dancer might have a few notes and ideas, but the performance is not practiced beforehand as it emerges from the contact and immersion into a space. Essentially, the space choreographs the dancer, rather than the other way around which is the usual case most dance performances. It is a dynamic process; intimate, fragile and unknowing. There is a scent of vulnerability in the air from the performer, the creators of the space and the audience watching. We are in this together and follow the unrecognizable script as it unfolds. Geographer John-David Dewsbury (2000, p. 474) describes this entry into performance as an unfolding, he writes

*'A threshold is encountered, whereupon there is a moment of hesitation perhaps with its own duration and affect - a sense of fear, the tingling 'being-there' that feels like trepidation...moments unfold, proliferating and swarming forth, each with a residue pertaining to a weight of its own, a weight that distributes the actualisation to come by increasing the potential for some encounters whilst decreasing that of others.'*

For Dewsbury (2000), performance is irretrievable. It is a topography of movement, enacted spontaneously, immediately and a 'never-before-occurring' situation that encompasses all the subjects in the space: performer, space-creator, researcher and observer. Space, like the Butoh performance, is also a threshold to be entered and encountered daily. The intention of the paperscape assignment had been to setup a spatial metaphor around Fukuoka's natural farming, and here, the aim is to test and experience this metaphorical garden. Frauke's performance in the imagined garden site enacted several organism forms which were conducted by the space such as slime, teeth monster Kali, salad leaves, stone, twisting power and rotting process. These material properties are techniques in Butoh practice that condition the natural element and metaphor for embodied immersion. Butoh too uses metaphors in its practice, therefore, the second interface is a layered set of enacted metaphors on top of the first interface's natural farming sculpted metaphor expanding the imagination further. These animated properties turned the paper landscape into a dynamic and interactive process. The dancer enacted several organism forms which were called on for and conducted by the space. There is an imaginary power in Butoh. Elin Diamond (1996, p.2) writes that this skill in performance is an important part of the transformation process, she explains this process as, 'to "embody," "configure," "inscribe," "signify," assert the possibility of materializing something that exceeds our knowledge, that alters the shape of sites and imagines other as yet unsuspected modes of being.' In imagining something that is not there, in essence by materialising its presence through movement, the space changes. To the surface, rises an ethics not considered before because the space itself choreographs it or the corporeal performs it. The performance has a movement, an act, an action, a performed narrative. Did the space all of a sudden become a garden? Was it not a room before? Here the imagination is harnessed to create a fiction of ethical choreography.

The fiction in this context could be construed as a mode of storying, a term used by anthropologist Donna Haraway. Storying is a mode of speculative fabulation (SF), a feminist practice exercised by Haraway to think in other typologies and worlds, the borders of thinking, doing and making are shifted so that non-harmonious agencies are made transparent and put together in uncommon configurations such as a paper garden and Butoh choreography. These compositions are necessary to bridge and grow what Haraway calls naturecultures. These relationships are 'multiform, at stake, unfinished, consequential' (Haraway 2003, p. 30). They break the dichotomy of human to nature binary thinking in order to compose a kinship with nature, much so what gardening does for the human body. Donna Haraway relies on her storying as a container for ecological behaviour potential, she encourages a role wherein,

*'Our job as thinkers are about telling and changing the stories so that they are more livable. So stories aren't all about the hero. - man, humanity. Etc. storying is powerful. Lives are lived along lines. Le Guin teaches about "big enough" stories. Situated stories that can collect up what is here, so it can be given' (The Evergreen State College Productions 2016).*



Such situated stories are aligned with situated knowledge.<sup>3</sup> In situated knowledge practices, what was invisible becomes visible and an experience. These immersed knowledges practices of alternate urban activities become agents in themselves; they are embodied stewards, knowledge containers, and means for transformative behaviour to occur.



*Figure 2 – The Butoh performance*

### **Interface 3 – Butoh workshop**

The intention of the Bodily Choreography workshop (figure 3) was to form an intervention in which Butoh could be explored further as an embodied methodology to approach the human body and space interplay, rhythm and timing relations to space, and space as a bodily-relational interaction process for knowledge serving architectural-thinking. The workshop now gave each student to possibility to try butoh for themselves rather than just being in the audience and watching Frauke perform. The aim was to share the methodology with students, to teach them Butoh techniques, and to gather their interpretation and reactions into how this could become a viable method in the field of the built environment. I wanted participants to train their ability to trust their own imagination through learning and working with a Butoh body set into different configuration of following and leading, touching and sensing perceived objects in the campus environment. The imagination is structured by what the senses communicate. The workshop was held by both Frauke and myself following the performance of interface 2.

Participants were immersed into the interstices between body, movement and external natural and urban environments so as to explore how their bodies are motivated by the space and vice versa. The body was to become a device, a cartographical tool tracing the landscape in an attempt to understand urban space and also one's own body through this newly generated contact. I wanted to inscribe the landscape into the body and the body into the landscape, creating the series of movements which could generate such atmospheres. The workshop was organised into four phases:

---

<sup>3</sup> Situated Knowledge is a notion introduced by Donna Haraway (1988) that is expanded in Chapter three: 'An embodied prism'

**Phase 1: slowness and silence** - slowing down and silencing the body in order to make it present. Participants line up in a long chord and walk slowly and silently to our place of training in a wooded natural setting. The intention is to gradually slip into a quiet and reflective state. The body becomes silenced, listening and sensing.

**Phase 2: let me guide you** - practicing awareness and using all the senses to navigate blindfolded through space. Building trust through not seeing. Participants are placed into duets in which one individual remains blindfolded, while the other observes and takes care over their partner so no harm comes (and vice versa). There are two parts to this exercise. In the first part, the blind-folded participant and their observer are facing each other holding hands. In the second part, the blind-folded participant is facing outward with their observer behind gently holding and steering them away from obstacles. The observer gently pulls and steers their blinded partner first in a forward direction, then in a backward direction. This part of the exercise is meant to develop trust between the duet and to being blindfolded. Each participant takes a turn in all the exercise conditions - blinded, observing, forward facing, outward facing. The blindfolded work gradually causes an acute dependency on all other senses to move through the space since the visual is removed.

**phase 3: I am watching over you while you explore** – once again this practices awareness using all senses as in phase 2 but with a greater amount of freedom. Participants now feel more comfortable and trusting and slowly rely more on their sensorial readings of the space following earlier phases of training. When in Butoh state of alertness, the senses become entangled and perform different alterations. Touching is replaced with smelling or hearing, and vice versa. In this phase, the duet is no longer holding hands, and there is a greater freedom of roaming movement given to the blindfolded person. The observer follows ahead and behind taking care, from time to time gently nudges their blinded partner away from any danger. In this phase of the exercises, participants have reached a sensorial trusting of their body to navigate through the space.

**phase 4: embodying material surfaces** - explore material properties with senses fully alert. Participants change the place for training from the natural landscape (phases 1-3) to a more urban space with a soft and hard-scaped environment. Using the Butoh sensitivity they have harnessed from earlier exercises, each takes turns in being blindfolded while other participants leads them to explore a variation of tactile situations with different materials surfaces. The site offers many possibilities; concrete sculptures, a drained fountain, pebbled and paved walkways, a grassy field etc. There are fallen leaves still wet from Autumn's windy throwings. There is moist slippery moss in the emptied fountain. The pebbles make crunchy sounds as they are walked upon. One of the stone sculptures is large enough to climb into. This embodied phase of the exercises offers an alternate understanding of material and their properties are experienced from inverted perspectives; the material is now also an agent as it experiences a body. Butoh gives a more sensible, dynamic and critical engagement with space. It aids in generating a trust of the relational materialities with that space on physical and sensorial levels. The experience of these materialities through the interventions gave a strong sense of the potential to understand matter, whether built or natural. Materials no longer became static. Some connected to time like the wet leaves on the ground which alluded to Autumn, a change of season and the winter ahead. The garbage found by one participant on the floor alluded to a miscare, to issues with waste in the city. Matter became an actant. Material became experience. This is a diverse way to think of space. The insights gained from Butoh can be used to design with and to understand space differently. What would happen if a design process was to happen after a workshop of this kind?





Figure 3 – The Butoh choreography workshop

### Discussion

Approaching matters of environmental behaviour certainly must include the body. Donna Haraway's (1988, p. 585) argument for a situated and embodied knowledge is crucial in such an approach, she calls for a 'doctrine and practice of objectivity that privileges contestation, deconstruction, passionate construction, webbed connections, and hope for transformation of systems of knowledge and ways of seeing.' Haraway (ibid, p. 589) argues for a knowledge that is entangled and emerging,

'for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims. These are claims on people's lives. I am arguing for the view from a body, always a complex, contradictory, structuring, and structured body, versus the view from above, from nowhere, from simplicity.'

From this perspective, we can make an assumption about the Butoh practice which aims to ground the body precisely in such a situated manner using all the senses available. In this grounded state, there is the opportunity to claim and prolong curiosity. The three interfaces were about embodied knowledge practices on how the body can be used to navigate, construct and know spatiality. Embodied modes such as mimicry, sensorial awareness, enactment, performance, trust, endurance started to emerge as reoccurring in each interface.

This paper argues that one of the important spatial learnings from Butoh is into place attachment, a recognition and obligation that enters inside the body. The dynamic relations that come about from the body work have the potential for an attachment that goes beyond a daily routine. In understanding the makeup of space, its characteristics – by exercising the becoming of space – we are more capable to take care of it because we come to realise how much we are a part of it and what it does to us. The Butoh body becomes the place, it amplifies this attachment by the deep awareness and reflection through the immersions. The space is no longer a place, it has a time, a character, it has agency. In this attachment, there is room for a commitment, a deep commitment (Carolan 2007).

I want to return to a quote from Carolan (2009) in which he emphasizes that experience and bodily practice necessitate linking, that what we sense whether through seeing, hearing, smelling, tasting or touching, is shaped by our doings. Butoh illustrates this condition when the hierarchical experience of sight is removed, we rely more on other sense to bring in information about the space. Bringing in this

sensuous kinship with spatial and natural materiality is the task of making an environmental embodied poetics and politics. These experiences need to leak into collective spaces to offer other fictions to live by in urban space offering such embodiments to be shared with other bodies – human and non-human – is crucial. To act in this way – on behalf of others – or in congruence with others is a forming of new relation-making with space and body. The role of experts in spatial practices is to create the conditions and experiences by which such encounters can occur – whether it is a spatial condition, a knowledge-production practice, a pedagogic condition or an activity.

With an embodied approach, research shows that, ‘ideas about embodiment have become central to theorizing food. Grounded in the notion that we know and experience the world through our bodies’ (Parham 2015, p.4). Parham supports the body’s inclusion in food-related research and lists various approaches for civic agriculture, community gardens, geography, sociology, spatial research and, in her own work on, conviviality and sustainable urbanism where embodiment is included. Such approaches, whether visual or physical, propose alternative use and conditions in the public realm with an exciting prospect for developing new methods for urban-making. This making includes the ‘role of the sensual, the emotional, the expressive for maintaining layered sets of embodied relationships to food and to place’ (Delind 2006, p. 221). Delind (2006, p. 134) refers to Lockwood to reinforce these relations, ‘Moving beyond the cellular level, she too feels that what we take into our bodies – what ultimately becomes us – instructs us about the world around us and our relationship to it. We learn about living contexts and we learn to engage with the spaces, rhythms, smells, tastes, colors, textures, periodicities of our food.’ Specifically, the senses (organoleptic interfaces) can activate such experiences and deepen relation to place nature.

### **Closing remarks**

Artistic research does not produce results as such, but can bring about things that were invisible prior to the embodied practice. The results, or findings, include an assortment of reformulated embodied methodologies for curating a corporeal politics and poetics in ecological urban-making. All interfaces in the methodology explore the relation between imagination and relation in the making of spaces. Through the modelling, performing and training, all participants have been kept in a state of curiosity and imagining with their species companions. Artistic research can stage an awareness that is not found with normative practice and theory. The body is a fundamental untapped resource in the way that we live in and treat urban contexts and can be used as a refined medium for learning, teaching and practice. Natalie Loveless, artist and professor working on such practices, situates these relations in ethical approaches to environmental challenges because they are “‘of the world” and not “in the world,” thereby calling us into a different mode of accountability and responsibility that is fundamentally ecological’ (Loveless 2012, p. 105). Loveless centres on the labour of makingthinking practices because they are crucial towards disciplinary transversality and to stay with the trouble (Haraway 2016) of ecological challenges. She reinforces that

*‘What matters is our willingness to engage the multiple ways in which this “making” is a fundamentally situated, relational construct; one that entangles us in relations of debt in ways for which we can never account, despite always being willing to be accountable’ (Loveless 2012, p. 103).*

Hence, we must be accountable, we must let other worlds surface through fiction-staging and become part of the process of makingthinking and doing practices. As Loveless points out, ‘practice and research are messy and entangled. They are both deeply creative practices that emerge as a kind of thinking that can take many forms’ (ibid). These forms are transdisciplinary and take into account multi-species and non-humans through the diverse stories reiterated. In these interfaces, the properties are a Butoh dancer, students, a role of trace paper, and a farming philosophy with blurred boundaries between all accomplices – makers, observers, performers, researchers and writers (and readers) which allow us to story. They are ways in which I have come to critically understand and dissect the ecology of my practice in urban gardening in an explorative way. The makingpractice of storying gives way to reformulating in terms of responding to the ongoing environmental challenges.

The investigation into the potential of imagination is that it can evoke empowering pedagogical methods for enabling another understanding of space. In the first and second interfaces, the intent was to set up a paper farm using a space-time construct, and to explore it through the Butoh performance in order to explore and develop embodied approaches for spatial awareness. Imagination was a critical key ingredient, as is the mode of creating a fiction to enact. In the third interface, the potential in Butoh practice emerges as space is experienced and understood differently, giving it a quality that may not have been evident before. It can change the way architects conceptualise space after the in-depth situated knowledge gained from embodied immersions of this kind. And, it changes the way inhabitants may appropriate space as a result. For instance, through the Butoh practice there might be a certain empathy for a site that emerges that calls for specific action. Butoh brings vulnerability to the space and to the body, along with empathy through the acute awareness that comes from the practice. Empathy is an important dynamic of space because it means we look after each other, after the other, and also after ourselves. This is what an ecological ethos is, it puts us on level ground to create a kinship with the surroundings – near and far. Building empathy gives potential for processes that are co-operative, co-productive, co-created and sympoetic. Ethics and space should be linked. I stand beside Jane Bennett's inspired writing on ethics, especially in terms of vibrant matter. In her view, 'moments of sensuous enchantment with the everyday world -with nature but also with commodities and other cultural products - might augment the motivational energy needed to move selves from the endorsement of ethical principles to the actual practice of ethical behaviours' (Bennett 2010, p. xi). Bodily practices, gardening and eating included, belong in the realm of ethical desire and behaviour because of the potential for relationality that they procure and the potential for action that they can generate.

## References

- Bennett, J., 2004. The Force of Things: Steps toward an Ecology of Matter. *Political Theory*, 32(3), pp.347–372.
- Bennett, J., 2010. *Vibrant Matter: A Political Ecology of Things*, Durham and London: Duke University Press.
- Carolan, MS., 2007. Introducing the Concept of Tactile Space: Creating Lasting Social and Environmental Commitments. *Geoforum*, (38), pp. 1264-1275.
- Carolan, MS., 2009. "I Do Therefore There is": Enlivening Socioenvironmental Theory. *Environmental Politics*, 18(1), pp. 1–17.
- Delind, L.B., 2006. Of Bodies, Place, and Culture: Re-Situating Local Food. *Journal of Agricultural and Environmental Ethics*, 19(2), pp.121–146.
- Dewsbury, J.D., 2000. Performativity and the event: Enacting a philosophy of difference. *Environment and Planning D: Society and Space*, 18(4), pp.473–496.
- Diamond, E., 1996. Introduction. In E. Diamond, ed. *Performance & Cultural Politics*. London and New York: Routledge, pp. 1–12.
- Dyrssen, C., 2015. Artistic Research - A Subject Overview 2014. In T. Lind, ed. *From Arts College To University: Artistic Research Yearbook 2015*. Stockholm, Sweden: Swedish Research Council / Vetenskapsrådet, pp. 20–27.
- Fukuoka, M., 1978. *The One-Straw Revolution: An Introduction to Natural Farming*, (L. Korn. C, Pearce. T, Kurosawa. Trans.), Rodale Press: Emmaus.
- Gripper, D., 2014. *Cassette Locale After Masanobu Fukuoka*. CD. South Africa: Howard Butcher.
- Haraway, D., 1988. Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), pp.575–599. Available at: <http://www.jstor.org/stable/3178066?origin=crossref>.
- Haraway, D., 2003. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*, Chicago: Prickly Paradigm Press.
- Haraway, D., 2016. Staying with the Trouble: Anthropocene, Capitalocene, Chthulucene. In Jason W. Moore, ed. *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. Oakland, CA, USA: PM Press, pp. 34–76.
- Janssens, N., 2012. *Utopia-Driven Projective Research: A design approach to explore the theory and practice of Meta-Urbanism*, PhD Thesis, Chalmers University of Technology.
- Keniger, Lucy E., Gaston, KJ., Irvine, KN. & Fuller, RA., 2013. What are the benefits of interacting with nature? *International Journal of Environmental Research and Public Health*, 10(3), pp. 913–935.
- Loveless, N.S., 2012. Practice in the Flesh of Theory: Art, Research, and the Fine Arts PhD. *Canadian Journal of Communication*, 37(1), pp.93–108.

- Marchand, T.H.J., 2010. *Making Knowledge: Explorations of the Indissoluble Relation Between Mind, Body and Environment* T. H. J. Marchand, ed., MA, USA. Oxford, UK. Victoria, AU: Wiley-Blackwell.
- Parham, S., 2015. Introduction. In *Food and Urbanism: The Convivial City and a Sustainable Future*. London UK. New York, NY: Bloomsbury Academic.
- Scannell, L. & Gifford, R., 2010. The relations between natural and civic place attachment and pro-environmental behaviour. *Journal of Environmental Psychology*, 30, pp. 289–297.
- Steel, C., 2012. *Sitopia Harnessing the Power of Food*. In A. Viljoen & J. S. C. Wiskerke, eds.
- The Evergreen State College Productions,. 2016. *Making Oddkin in the Chthulucene*. [online lecture]. 25 May. Available from: <https://www.youtube.com/watch?v=fWQ2JYFwJWU> [Accessed 11 January 2017].
-

# The Turin food System toward a Metropolitan Food Policy: An Actorial Perspective

Giacomo Pettenati<sup>1</sup>, Egidio Dansero<sup>1</sup>, Alessia Toldo<sup>2</sup>

<sup>1</sup>University of Turin, Department of Cultures, Politics and Society,

<sup>2</sup>University of Turin, Interuniversity Department of Regional and Urban Studies and Planning

---

## 1. URBAN FOOD POLICIES: AN ACTORIAL PERSPECTIVE

The awareness of the urban nature of food related issues (Pothukuchi and Kaufmann, 1999) brought cities to be identified as main drivers of the global food system, as particularly exposed to the downturns of the current food system (Morgan and Sonnino, 2010) and as specific scales of the food system and scales of action of Urban Food Planning (Pothukuchi and Kaufmann, 2000).

Many cities in the last decades started to develop Urban Food Policies aiming at planning and managing sustainable urban food systems, and at guaranteeing high quality, healthy and accessible food to city dwellers and city users (Moragues Faus and Morgan, 2015).

Starting from the first seminal papers, like those by Pothukuchi and Kaufmann (2000) and the more recent one by Morgan (2006), the contributions to the 20 years old debate on Urban Food Planning have explored this very specific typology of urban policies according to different perspectives, often basing on findings from case studies and from comparative analysis.

Some more theoretical contributions reflected on the potential role of Urban Food Planning in the urban agenda (Morgan, 2009; Sonnino, 2009) and in its relationships with the tendencies of the global food system and its multi-scalar articulations (Morgan and Sonnino, 2010; Sonnino, 2016).

Other contributions focus on more specific issues connected to Urban Food Planning, such as sustainability (Viljoen and Wiskerke, 2012), the spaces and scales of food planning (Born and Purcell, 2006; Tecco et al., 2017), the relationships between the grassroots movements bottom-up push for food planning and its translation into institutional policies (Mendes, 2008; Reed and Keech, 2015), the models and the institutional bodies for the governance the urban food system and the implementation of Urban Food Policies (e.g. Food Policy Councils, Food Commissions, etc.) (Rocha and Lessa, 2009; Moragues-Faus and Morgan, 2015).

Starting from the consideration of Urban Food Policies as specific local public policies (Moragues-Faus and Morgan, 2015), this contribution tries to investigate the development of food policies in the city of Turin (Piedmont, Italy), describing its chronological evolution (see Calori et al, 2017) and focusing on the role that the actors of the food system played in the process.

The purpose of this attempt is to enrich the theoretical debate and the empirical investigation about food policy development, trying to highlight its important role of integration of sectoral policies and engagement of different types of actors in the food governance.

Few scholars so far analyses the development of urban food policies with an actors-based approach and basing on theoretical frameworks of public policy analysis.

The probably more interesting reference so far is Caraher et al (2013). The authors draw from the Walt and Gilson's policy triangle (1994) and from the Kingdon's (2003) three streams of policy development (problem formation and recognition; the formation and refining of policy proposals; politics) to describe and analyse 'who' has been involved in the development of food policy in Victoria (Australia), 'how' and 'why', focusing on the role of one actor: the Food Alliance.

As Lang et al. (2009) outline, though, the process of definition of a food policy is less linear and comprehensive than other policy making processes, where the relationships between problems, strategies and objectives are more clear, and in many cases food policy issues and implementations are still early stage.

This is clear in the case of Turin, where different processes started, in the lapse of few years, with the aim of engaging the actors of the food system for the development of a participatory food policy and/or the establishment of a food commission/council.

Referring to the three streams of policies of Kingdon (2003), we can say that the actors of the process of food policy development has so far stopped at the step of the problem formation and recognition and to the bottom-up suggestion of some possible solutions by the actors, but it is still lacking of a political taking charge of the process by institutional policy makers.

In this paper we will thus analyze and comment the arena of actors involved - more or less actively - in this various processes, described in the next paragraph, aware of the fact that we are considering only the first steps of the complex process bringing to the implementation of an Urban Food Policy.

## **2. URBAN FOOD STRATEGIES IN TURIN (ITALY)**

Situated in the north-western area of the country, Turin is the fourth biggest Italian city in terms of population, counting 900,000 inhabitants, with numbers rising to almost 1.5 million in the densely urbanized metropolitan area. In the last decades, the city has undergone a physical and symbolic post-industrial transformation, with a remarkable re-invention process of the city's image, which experienced its turning point in the 2006 Winter Olympic Games (Dansero and Puttilli 2009). The post-fordist Turin is being characterized by a multiple identity, where beside surviving industrial activities, a new profile of the city progressively emerged, based on assets like cultural tourism and where gastronomy and food-related events play a very important role. Turin belongs to a territorial system where food is a mature economic, social and cultural asset, which contributes to regional development that is increasingly based on high quality food production (wine, chocolate, nuts, cheese, etc.) or food and wine tourism and food-related events (e.g. Terra Madre, Salone del Gusto, CioccolaTò, etc.), which are gradually replacing heavy industries in the economic system and in the symbolic representations (Vanolo, 2015) of an area which goes far beyond the limits of the Turin metropolitan area, including high-quality rural regions, such as Langhe, whose wine production related cultural landscape was inscribed in the UNESCO World Heritage List in 2014.

The food system of Turin is characterized by a general high-level of accessibility to fresh and healthy food (only in the city, 42 open-air markets selling fresh groceries are daily organized), by a still strict relationship between some consumers and producers (about 300 farmers come to town to sell their products everyday) and by a high number of grassroots practices somehow connected to the aim of having a more sustainable food system. Food seem in fact to play an important role in the social and political activism of many citizens of Turin, as witnessed by the many practices and projects aimed at imagining, planning and practicing a new model for the food system, based on new relations between people, urban space, natural environment and food (Bottiglieri et al. 2016).

Even if within a positive context, starting from the awareness of the existence of weaknesses, inequalities and unsustainable practices, three different processes - initiated almost concurrently during the past years - constitute the main elements of the road toward the definition and implementation of a food policy for Turin. None of them, though, led so far to any official operational document or to the adoption of a real UFP.

The first is the working table Torino Capitale del Cibo (Torino Food Capital) launched in 2014 by the public-led association Torino Strategica within the third Strategic Plan Torino Metropoli 2025, which defines the vision and plans for the future of Turin's metropolitan area, and currently at a stop, due to the changes in the local government of Turin. The main aim of this table was to put food in the debate about the strategic planning of the metropolitan area, especially by the creation of a Food Commission, deemed as the combination of Food Policy Council and business hub, in view of developing and managing a metropolitan food system designed to ensure better quality and be more sustainable, fair, resilient and competitive.

The second is Nutrire Torino Metropolitana (Feeding Metropolitan Turin): a participatory process managed by the Città Metropolitana (the former Province of Turin) and the University of Turin, that in 2015 involved a wide selection of actors of the food system (more than 200) in the participatory definition of a local food agenda, as a first step towards launching a food strategy for this area.

The third is the European project Food Smart Cities for Development (FSCD) funded by the Development Education and Awareness Raising (DEAR) Office of the European Commission, which had as one of its expected outputs the creation of a Food Policy Council. The project formally ended in December 2016, but the Council has not been established yet.

These three processes feature different scales of action (from the provincial to the municipal scale), different leading actors and different specific aims. However, they share a general methodology and the general objective to involve a wide selection of actors and stakeholders of the food system in the process

of definition of the priorities of a possible UFP and the institution of a governance structure for the food system.

The three processes involved many stakeholders, representing the whole food chain, in a participatory path that alternated moments of wide participation (e.g., round tables organised by the NTM initiative), with smaller meetings involving a selection of stakeholders. Despite the current lack of a food plan for Turin, the three processes share a project designed to constantly evaluate and monitor the food system with participatory methodologies. The project is the *Atlante del Cibo*, a platform developed by a multidisciplinary network of researchers from the main local universities (University of Turin, Polytechnic of Turin, University of Gastronomic Science) (Dansero et al, 2015).

### 3. METHODOLOGY

A review of the main approaches to the actors of a process highlights the great variety of perspectives with which we can approach this theme, among which we can mention those of a predominantly geographic nature linked to the territorial action of subjects (Dematteis, 2001; Gumuchian et al., 2003; Di Méo e Buleon, 2005; Salone, 2005), those focusing on governance processes (Rhodes, 1997), on participation (Ciaffi and Mela, 2006), on the role of actor-networks (Latour, 2005), on the definition of (Freeman et al., 2007) or on public policies decision-making processes (Dente, 2014).

The main methodology used for the actors-network analysis is inspired to the theoretical frameworks proposed by the Italian political scientist Bruno Dente, whose works mostly focused on the investigation of policy making processes and on the role of the involved actors.

Dente (2014) defines as the actors of a process only those who actively act in the process, avoiding a too wide notion of actor - confused with those of stakeholder - as well as a too narrow one, which sees as actors only those who have legal titles to take part in a decision-making process.

While not reaching the extreme of methodological individualism, it is well present in this research the awareness of the importance of the role of individuals acting within collective actors. Individual actors can express action logics that goes beyond the ones of the organizations they belong to and in the name of which they participate in the process. It is important to expect and consider these logics to avoid incomplete interpretation of territorial and policy development processes (Gumuchian et al, 2003; Dansero, 2013).

Starting from this definition of actor, we have analyzed the actors involved in the first phases of the process of food policy development in Turin in two main steps.

First, we mapped two main categories of actors of the process: (a) those who are actively leading the food policy development and (b) those who - even if not explicitly aiming at developing an urban food policy - are involved in practices participating in increasing the environmental sustainability and the social justice of the food system, identifying in food a field of political, social and cultural action.

Second, we analyzed the food arena actors using some of the categories proposed by Bruno Dente (2014), concerning:

- The typology of actor, defined according to the logics of action showed in the process. From this perspective, Dente identifies five typologies of actors: **political** actors, who base their claim of intervention in decision-making on the fact that they represent citizens, **bureaucratic** actors, whose intervention is based on the consideration that legal rules give them a specific responsibility in the decisional procedure and the formal competence to intervene; bearers of **special interests**, who base their claim of intervention on the fact that the choice among the possible alternatives directly influences their interests, meaning they totally or partly bear the costs, and/or draw benefits from it; bearers of **general interests**, who, even without any political or legal legitimation, base their intervention on the premise they represent subjects and/or interests that are not structurally able to act directly; and **experts**, who have the necessary knowledge to structure the collective problem and/or to find the most appropriate alternatives to solve it.
- The resources of action used by the actors. They can be, according to Dente, political, related to the consensus that an actor can have; economic, concerning the amount of money and other goods an actor can provide for the functioning of the process; legal, defining the limits and the characteristics of the

behavior of the actors; knowledge, referred to the amount of information, skills and knowledge an actor can provide for addressing the process.

- The objective of each actor. They can be content-related goals, regarding the problem itself and/or the solution to adopt; or process-related goals, when the alternative solution they prefer is not chosen according to its capacity to meet the needs at the basis of the decisional process, but for the consequences it has on resources and on other participants' positions

For what concerns the sources of data for this article, they have been drawn from existing reports and documents and complemented by authors' direct experience, knowledge and involvement in the current stages of the processes of food policy development.

#### **4. FINDINGS AND DISCUSSION**

As we can see in the table 1, the main actors involved in the processes of definition of the Turin food policy are four institutional subjects: the Metropolitan City and the Turin Municipalities, the Association "Torino Strategica" and the University of Turin.

The Metropolitan City of Turin is one of the most active actor involved in the processes. Despite this, it has a really few direct food and nutritional skills, which have further diminished since January 2016, with the transition to the agricultural and mountain expertise area to the Regione Piemonte. However, some Sectors (such as the Mountain and Rural Development, Valorization on Typical Products) have been engaged as promoters of many specific projects (such as those related to public procurement and school meals, but also to the promotion of the short chain, the regeneration of neighborhood markets) for several years. This has sedimented knowledge, but especially strong relationships with local stakeholders, in particular producers, processors, distributors. With this background, the Metropolitan City has played a key role in the food policy process, in terms of promoting and organizing events, and involving actors. However, it should be stressed that this role should not be attributed to the Metropolitan City as a whole, but to the commitment of a single official.

The Municipality of Turin enters into food policy processes as an active subject, in different ways and timings. This is also due to a political turnover of the June 2016 election. In this light, it is possible to identify a first phase under the previous administration, where the Municipality did not have a direct role in the food policy process but only through the Association "Torino Strategica". This association, involved in the elaboration of the Third Strategic Plan Torino Metropoli 2025, has included among the strategic actions the ronde table called "Turin Capital of Food" with the aim of building a future vision for the city based also on food as an asset of economic development, excellence, national and international competitiveness.

In the second phase, however, thanks to the participation of the City of Turin in the Food Smart Cities project, the Municipality has taken a more direct role in the processes. First of all including right to food, in the Statute of the City, but also through the organization of workshops and cultural events. After the change of political administration (from democratic party PD to Five Stars Movement), the City informally expressed the interest to create a Food Commission, but still (August 2017) without any formal commitment.

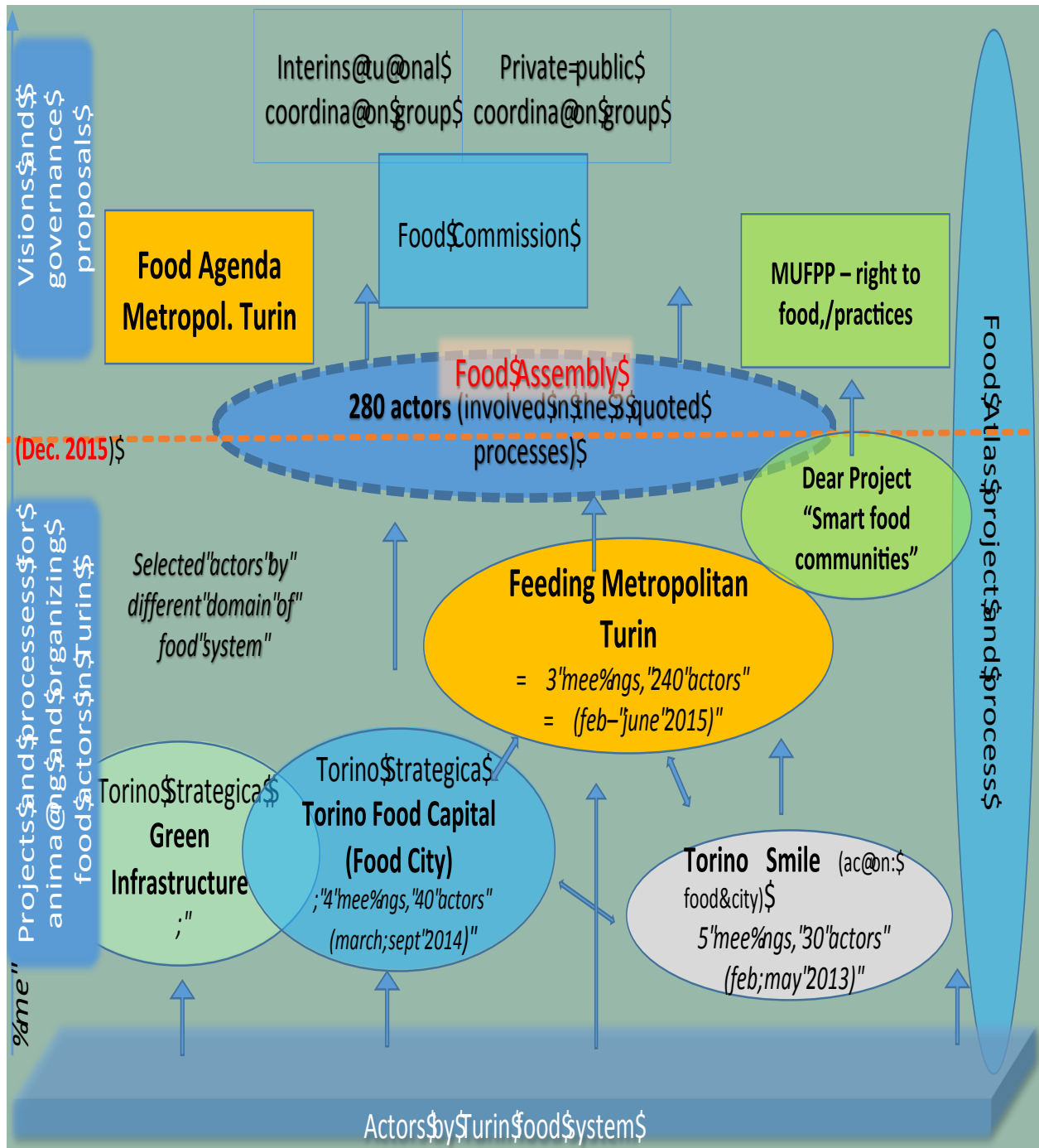
Finally, the University of Turin is perhaps the actor most widely involved in the different food policy development processes. Since the first embryonic process (Turin Smile), the University has been actively involved in the various processes, always with a directive role, playing the role of expert and of stakeholder of the food system. The University (together with the Polytechnic of Turin and the University of Gastronomic Sciences) is also working on the food system assessment, with a project of participatory observatory of the food system called Food Atlas (Atlante del Cibo di Torino Metropolitana).

As we can see in the Table 2, which represents a non-exhaustive photograph, we have found more than 80 actors actively involved in practices, projects and actions aimed at enhancing the horizons of environmental sustainability, social justice and the local economy of the Turin food system. In general terms, these actors are, above all, associations and subjects of the third sector. About thirty, approximately, are actors who deal specifically with food; most, on the other hand, are subjects whose

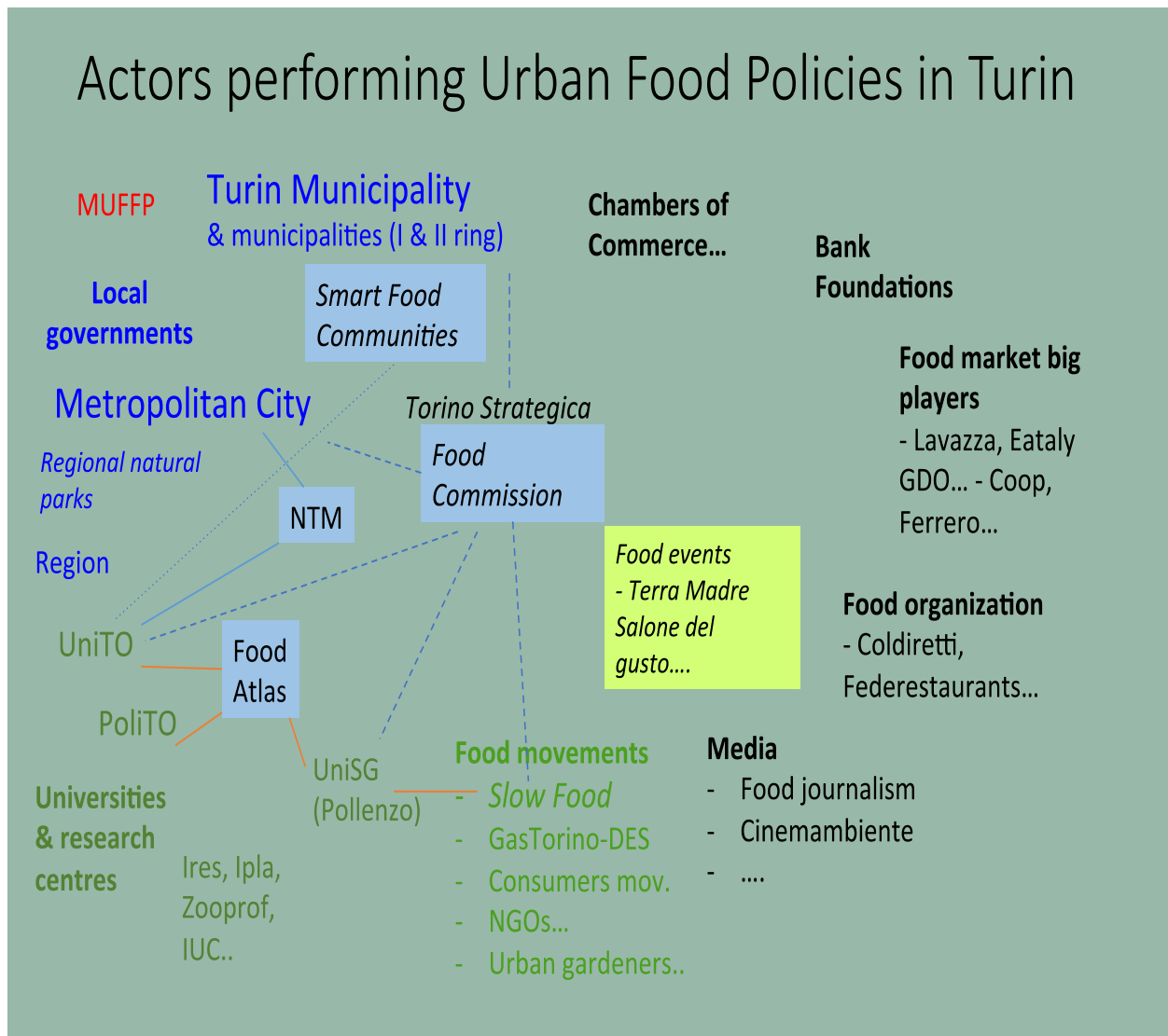


work is not directly related to food, but that they see a resource, a vehicle to achieve sustainability goals in its multiple dimensions. Among this actors an important role is played by Slow Food, which has not its headquarters in Turin but in Alba, one hour from Turin. Slow Food is strictly linked anyway to Turin, where it organizes, together with Turin municipality and Piedmont Region the mega-glocal event of Terra Madre-Salone del Gusto. Slow Food also took part to many of the processes highlighted before.

**Fig. 1 Main processes towards Turin food policy**



**Fig. 2 Main actors involved in processes towards Turin food policy**



**Table 1 - Actors actively involved in a processes of a Turin Food Policy**

PROCESSES TOWARDS THE TURIN FOOD POLICY		
	Type of actors	Processes involved in
Metropolitan City of Turin	bureaucratic actors,	TAVOLO TORINO CAPITALE DEL CIBO NTM
City of Turin	bureaucratic actors,	SMILE DEAR
University of Turin		SMILE TAVOLO TORINO CAPITALE DEL CIBO NTM DEAR

Table 2 - Active stakeholders involved towards a more sustainable food system

<b>ACTIVE ACTORS TOWARDS A SUSTAINABLE FOOD SYSTEM</b>		
Sustainability		
Food aid and food surplus redistribution	Banco Alimentare Caritas, Cooperativa Snodi, Associazione Liberi tutti Associazione Con Moi Associazione Eufemia Associazione Terza Settimana Equoevento	
Catering and economic activities involving disadvantages people	Cooperativa Ecosol Caffè Basaglia Cooperativa Meeting Service Dinamo Coop Gruppo Spes Cooperativa sociale Terra Mia onlus Cooperativa Animazione Valdocco	
Soup kitchens	ARCI Torino Charity and churches Caritas Croce Rossa	
Critical consumption	GAC – Movimento Consumatori GAS Cooperativa Isola Cooperativa Mondo Nuovo Cooperativa Johar Cooperativa Glocandia Cooperativa Il Ponte Food Hub To Connect Germogliato Genuino Clandestino	
Food and school (educational programmes, educational farms, school gardens)	ITER Laboratorio Chimico della Camera di Commercio di Torino	
Public procurement, school canteens		
Urban gardens	Comitato Urban Barriera Associazione Parco del Nobile Associazione Volontari in Rete Associazione Innesto Coefficiente Clorofilla Comunità di Mirafiori onlus. Agesci Abilitutti, KJ+, Jonathan, Orti Altì, Associazione Ciclobus, Dipartimento di Neuropsichiatria Infantile ASL TO2, Associazione	

	Casematte, Associazione Mondoerre. Associazione URBE Uno di Due Onlus Istituto per l'Ambiente e l'Educazione Scholé Futuro Onlus Orti Alti e Studio 999 Urban Rigeneration Cooperativa Synergica Residenza Dorho Caritas Diocesana Architettura Senza Frontiere Cooperativa Carapace Associazione GAPS Cooperativa Agridea, Ristorante Le Fonderie Ozanam.
<b>Agricoltura periurbana</b>	Comitato Agritorio
<b>Food distribution</b>	SMAT Torino
<b>Apicoltura</b>	Associazione Urbees
<b>Food culture</b>	Conservatoria Cucine Mediterranee Convivia Slow Food Torino Associazione Les Petites Madeleines AIAPP Associazione Italiana Architettura del Paesaggio Piemonte Valle d'Aosta, Alta Parella Tedaca Bellarte. AGAPE Associazione Gastronomica Peruviana Centro Latinoamericano para el Desarrollo Rural
<b>Health</b>	Centro di Epidemiologia del Piemonte
<b>Local economy</b>	Coldiretti Amis 102 Last Minute Sotto Casa Massimo Cento

## References

- Born, B., & Purcell, M. (2006). Avoiding the local trap: Scale and food systems in planning research. *Journal of planning education and research*, 26(2), 195-207.
- Bottiglieri M., G. Pettenati G. and A. Toldo, *Toward Turin Food Policy. Good Practices and Visions*, Milan, Franco Angeli, 2016.
- Calori, A., Dansero, E., Pettenati, G., & Toldo, A. (2017). Urban food planning in Italian cities: a comparative analysis of the cases of Milan and Turin. *Agroecology and Sustainable Food Systems*, online version.
- Caraheer, M., Carey, R., McConell, K., & Lawrence, M. (2013). Food policy development in the Australian state of Victoria: a case study of the Food Alliance. *International planning studies*, 18(1), 78-95.
- Kingdon, J. W. (2003). *Agendas, alternatives, and public policies*. London: Longman Pub Group.
- Lang, T., Barling, D., & Caraheer, M. (2009). *Food policy: integrating health, environment and society*. OUP Oxford.

- Mendes, W. (2008). Implementing social and environmental policies in cities: The case of food policy in Vancouver, Canada. *International Journal of Urban and Regional Research*, 32(4), 942-967.
- Moragues-Faus, A., & Morgan, K. (2015). Reframing the foodscape: the emergent world of urban food policy. *Environment and Planning A*, 47(7), 1558-1573.
- Morgan, K., & Sonnino, R. (2010). The urban foodscape: world cities and the new food equation. *Cambridge Journal of Regions, Economy and Society*, 3(2), 209-224.
- Pothukuchi, K., & Kaufman, J. L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. *Agriculture and Human Values*, 16(2), 213-224.
- Pothukuchi, K., & Kaufman, J. L. (2000). The food system: A stranger to the planning field. *Journal of the American planning association*, 66(2), 113-124.
- Reed, M., & Keech, D. (2015). Building a Bristol Food City Region from the Grass Roots up: Food strategies, action plans and food policy councils. *Urban Agriculture Magazine*, 29, 26-29.
- Rocha, C., & Lessa, I. (2009). Urban governance for food security: The alternative food system in Belo Horizonte, Brazil. *International Planning Studies*, 14(4), 389-400.
- Sonnino, R. (2009). Feeding the city: Towards a new research and planning agenda. *International Planning Studies*, 14(4), 425-435.
- Sonnino, R. (2016). The new geography of food security: exploring the potential of urban food strategies. *The Geographical Journal*, 182(2), 190-200.
- Tecco N., Bagliani M., Dansero E., Peano C., (2017), Toward the Local Territorial Food System: Spaces of Analysis and Action, *Bollettino della Società Geografica Italiana*, forthcoming.
- Viljoen, A., & Wiskerke, J. S. (Eds.). (2012). *Sustainable food planning: evolving theory and practice*. Wageningen Academic Publishers
-

## **Food Planning for Organic Urban Agriculture in Southern Africa's Cities. Sustainable Urban Food Systems with urbanGAPs for Horticulture Production**

**Nicole Paganini<sup>1</sup>, Anja Schelchen<sup>2</sup>**

Sub-Saharan Africa is the most rapidly urbanizing region in the world, and South Africa is the most urbanized country within the Southern Africa countries. Food and Nutrition Security is not only a rural problem, the access to affordable food is a growing challenge in the cities as well. Especially in the urban informal areas, Food Planning plays a crucial part of successful development of urban Food Systems and is one of the main challenges to address for policy makers, the population, city planners and of course - urban farmers.

Urban horticulture activities are increasing worldwide with more than 800 million farmers and gardeners involved, who produce 15-20% of the world food. In Africa, 130 million urban residents are working in Urban Agriculture (FAO 2010:4). "With potential yields of up to 50 kg per m<sup>2</sup> per year and more, vegetable production is the most significant component of urban food production, which could contribute to Food and Nutrition Security" (Eigenbrod C. a. N.Gruda 2014: 486). The discussion in the impact of Urban Agriculture related on Food Security is intense and apart of that it could be assumed that especially Organic Urban Agriculture has the potential to reduce the health and ecological risks associated with conventional urban agricultural practices, and provide more urban agrobiodiversity - a way towards Nutrition Security within a sustainable urban Food Planning Strategy.

The organic crop production in urban environments is challenging because of intensive plant nutrient requirements and incidence of disease. Low-tech and inexpensive techniques are necessary - based on Good Agricultural Practices as well as sufficient and appropriate training for urban farmers. Good Agricultural Practices are a collection of principles and methods to cultivate the land. The aim is to produce food in a sustainable, environmental friendly and healthy way. The produce is considered to be sufficient (Food Security), safe and healthy (Food Safety) as well as nutritious (Food Quality). Apart of the production side, the impact of urban horticulture activities cannot be evaluated without taking the whole Urban Food System into consideration. One must consider efficient production planning and the desired quality. This will contribute to both nutrition security and as well as to quality standards that a market, also an informal one, requires.

This research raises the questions: How organic can urban agriculture be and how can organic urban agriculture contribute to more sustainable urban Food Systems.

The case study is conducted in the backyards and market gardens of the Metropolitan area of Cape Town, as well as the green belt agriculture of Maputo. This research is based on the definition of Urban Agriculture given by Mougeot and van Veenhuizen, which "describes various forms of plant and livestock production in a variety of production systems in urban and peri-urban areas, (re-)using largely human and material resources, products and services found in and around that urban area (Mougeot 2001). It complements rural agriculture and increases the efficiency of national food systems (van Veenhuizen, 2006)". Livestock is not considered as in both study areas livestock does not play an active role yet.

The first step of this research is focused on a production analysis in Cape Town and Maputo, and on vegetable and fruit cultivation for self-sufficiency and cost saving / income generation through upscaling of backyard production to organic market gardens. Comparative observation and an assessment of Good Agricultural Practice in both cities show differences in food quality, quantity and diversity. A baseline survey has been conducted in both cities to get a clear picture of the urban farmers and gardeners, their sociodemographic and socioeconomic data, the production methods and the income generated through urban agriculture as well as the farmers' perception of organic urban agriculture.

In Cape Town the research was mainly conducted in Khayelithsa (a so called "black" township) and Mitchells Plain (a so called "coloured" township). South Africa's second largest city is divided into Cape Town city centre ("City Bowl") and a marginalized majority of people living in the Cape Flats in different townships. Due to historical impacts, "South African cities have amongst the greatest divide between rich and poor in the world. (...) that impact on some level, on how people buy, carry, store and use food"

---

<sup>1</sup> Humboldt Universität zu Berlin, Albrecht Daniel Thaer Institute for Agriculture and Horticulture

<sup>2</sup> Humboldt Universität zu Berlin, Centre for Rural Development

(Joubert 2012: 12). This is an obvious challenge for Food Planning in Cape Town. Fragmentation in former city planning leads to food deserts for the urban poor and physical separation of the food growers and the food buyers. These food deserts are defined as “areas of relative exclusion where people experience physical and economic barriers to accessing healthy food. (Batterspy 2011: 24). Organic market gardens are already playing a role in Cape Town, but still a very small role. The majority of the gardens are economically supported by NGOs or the communal extension service.

The state of Food Insecurity was described by Batterspy as severe. 89% of the households in Khayelitsha are food insecure (Batterspy 2011: 13) - especially the female-centered households. Urban Agriculture is a strategy followed by several NGOs as well as the local extension service as a countermeasure against Food Insecurity. The City Council also put an Urban Agriculture Policy Paper in place, which could be a first formalized step on institutional Food Planning. External factors like poor soil quality, limited space, theft, expensive inputs, and severe droughts impede the contributions of urban agriculture to Food and Nutrition Security. These results reconfirm the results of Batterspy’s research: “Household urban agriculture is not a significant source of food in Cape Town, despite the existence of an Urban Agriculture Policy created by the city” (Batterspy 2011: 22). The household interviews with 120 city farmers in Cape Town showed that urban agriculture activities contribute to household income, but on a very small scale. From the 64 interviewed backyard gardens just 16 % sell their produce. 25% of the backyard gardener share their produce within the neighborhoods, so the gardening activity could lead to cost saving.

The second case study is Maputo. It is the capital of Mozambique, and growing at a similar rate as Cape Town in the last years. Compared to South Africa, Mozambique is the least urbanized country in the region but nevertheless pulls the population to its capital Maputo. Urban population growth rate is estimated by around 4,5% to 5% (Raimundo 2014: 1). Still, more than half of the population is considered as food insecure. For decades, Urban Agriculture has been a source of income for about 10% of Maputo’s population, and an estimated 40.000 people benefiting from Urban Agriculture. 12.000 active farmers are members of farmer associations in the green belt of the city, cultivating up to 1.300 hectares of land mainly in the urban and periurban districts Kamabukwana and Kamavota.

The rapid process of urbanization has many challenges for food planners in metropolitan areas; it limits access to sufficient healthy, safe, nutritious food as well as land for its production. The debate on the impact of Urban Agriculture is widely discussed regarding the future role of cities, because of its potential to supply food, increase income, contribute to “green cities”, and improve human-nature relationships. Many cities in the world acknowledge this potential and consider Urban Agriculture in their spatial planning, sectorial strategies, and policies. Viljoen and Bohn write about Continuous Productive Urban Landscape (CPUL) and state: “space for food production and distribution can beneficially enhance cities as part of a wider landscape strategy, and believe that enough knowledge and experience exists to be able to sketch out the multiple actions and interactions between individuals, organisations, communities and disciplines that together can achieve the infrastructure required to support a more sustainable food system” (Viljoen A a.K.Bohn 2014:388).

The production of food in the urban context, and its relation to sustainable Food Systems raises questions not only of quantity and scale, but quality as well. “In South Africa, the evidence shows that malnutrition rates are rising in urban areas, not withstanding the fact that the country is nationally food secure and has a well-developed agricultural sector” (Batterspy: 1) The question on urban Food and Nutrition Security is also on the quality of food. Like Joubert discusses, “two meals per day do not mean, that people have an adequate and nutritious diet” (Joubert 2012: 186). In both case studies, the produce from self-supply is not sufficient for a nutritious diet. It is also a cultural question of food behavior. During the research field phase it was observed, that kilograms of ripe eggplants have been thrown away in Cape Town, as there was no local market and people are not used to eating them. Especially leafy vegetables are considered in some neighborhoods of the Cape Flats as the food of the poor. This research considers a healthy diet to consider the quality of the production and defines the appropriate quality of food. Organic produce refers to the official definition of IFOAM (International Federation of Organic Agriculture Movements). Organic agriculture is “a production system that sustains the health of soils, ecosystems, and people. It relies on ecological processes, biodiversity, and cycles adapted to local conditions rather than the use of inputs with adverse effects. It combines tradition, innovation, and

science to benefit the shared environment and promote fair relationships and a good quality of life for all involved”.

Results from the present research will show the understanding and practice of Good Agricultural Practices (GAP) in both cities based on observations, open qualitative farmer interviews, and standardized questionnaires. It is assumed that GAPs in Cape Town are far ahead of Maputo. It can be generally observed, that backyard gardening in the Cape Flats has insufficient space and does not offer the potential to be a livelihood. In comparison two third of the interviewed market gardeners mentioned that their gardening activities contribute to their household income. The market gardens have potential to be a source of food for the Food Insecure neighbourhood as well as a possible income generation for the farmers. To do so, they would need to develop climate smart agricultural methods and adapt the production to local demand. The production in Maputo is far from Good Practice production as the first need of the people is speed. There are no governmental guidelines on Good Agricultural Practices - neither for the rural agriculture, nor for the production in the Green Belt of Maputo.

However, these two cities present two realities. Good practices used in Cape Town's market gardens and Maputo's few "organic machambas" (verified with Participatory Guarantee Systems), could be the theoretical base for more sustainable Food Planning in both cities. The potential of the quality assurance tool - PGS certification - is analysed using the example of Western Cape PGS movement in South Africa. The grass root movement allows producers to work on their own quality assurance standard and building up their production on trust, participation, and sovereignty from global and national food markets. Farmers visit the members of the PGS group frequently and carry out an assurance check on their own PGS criteria. A third-party audit as organic certified agriculture requires, is not part of PGS certification. Apart of the PGS members, the assurance visits are also open to the public like consumers, vegetable box clients or interest of academia or civil society. The visits are also a platform for farmers to exchange, interact and learn from each other. The implementation of PGS in the Western Cape region was observed, accompanied, analysed and in a next step, transferred to urban production guidelines - so called urbanGAP. None of the main organic standards worldwide (EU, NOP, JAS, BioSuisse) based on IFOAM organic standard as well as the soon being launched SAOSA Standard for organic agriculture in South Africa considers urban horticulture production. Schmutz et al. recommended to create a supporting framework for urban organic agriculture which should allow organic certified substrates to be used, if local circumstances doesn't allow to produce in the soil (Lorenz 2015: 148). The research on organic urban agriculture in Maputo and Cape Town will go a step further and elaborate on all production steps criteria for urban Good Agricultural Practices.

The first analysis on production techniques (GAP assessment) and farmer interviews have shown in both cities that urban agriculture is far beyond being safe, healthy and organic. The production in Maputo is mainly focused on cash crops like salad and cabbage. Both products have a short cultivation period and a direct turnover with local dwellers. The produce of more valuable products is according farmer interviews challenging. Pest pressure and a lack of knowledge are factors that hinder farmers from cultivating more diverse crops. Cheap imports from South African commercial agriculture floods the informal markets in Maputo. The production is characterized by high pesticide and mineral fertilizer input, and the soil and nutrient management is as little used as crop cycling techniques or cover crops. The seeds used are mainly treated seeds and GMO seeds. Destruction caused by pests, is named as the main challenge. All associations have no common pest management system in place and support the use of pesticides and herbicides. Few farmers are working with agroecological methods, but without any buffer zone to their conventional neighbors. In Cape Town, where organic methods are trained by the active NGOs, the situation is the same at the market gardens. Biodiversity is quiet higher in Cape Town compared to Maputo, as the production is mainly destined for few restaurants in the City Bowl. The main challenges are nutrition-poor and sandy urban soils, without fertile top soil. A long-term soil management plan to build up humus layer is not in place. Agroecological methods like the use of cover crops and mix-culture are trained but poorly implemented. Seeds are usually treated, hybridized, and GMO modified.

The discussion of organic urban agriculture in Cape Town quiet advanced than in Maputo. Three of four of the interviewed urban farmers in Cape Town mentioned that they work with organic production



methods. In the perception of these farmers, organic urban agriculture means mainly to avoid any chemical inputs and to produce food for a healthier life. Organic urban agriculture creates niche markets as the example of a vegetable box system in Cape Town and Maputo demonstrates. In this program, urban farmers in the market gardens of the Cape Flats produce high end products like asparagus, artichokes or herbs for the City Bowl restaurants. The short distances between farmer and client provides the opportunity of small-scale and diverse production. Farmers living close by are organized in urban cooperations. The organization of Western Cape Participatory Guarantee System in Cape Town is currently certifying the first two urban gardeners according to their organic standard. Farm visits at both places attracted around 20 people and provided the opportunity to exchange with other farmers.

Observations and expert interviews also brought to light the risks that the urban context provides for organic agriculture. Compared to rural areas, urban areas have a higher risk of contamination through human activity. Contamination could include zoonotic diseases or bacterial contamination (e.coli), or pollution. These specific urban aspects will be outlined during the deepening research in urban production guidelines. A focus on organic and agroecological production methods could lead to long-term improvements to the general nutrient-weak and heavy metal-contaminated urban soils, which first analysis in Cape Town and Maputo also confirmed.

Recommendations for the urban context are defined by different researchers. Lorenz highlighted organic production methods for Urban Agriculture with a special focus on soil management methods like intercropping, composting and rotating systems (Lorenz 2015: 148). To achieve a better organic urban agriculture program and more sustainable Food System, the food planners and policy makers have to provide enough production space. To achieve a sustainable urban Food System based on organic urban agriculture, cities need to educate farmers and consumers, and provide a clear definition of what organic urban agriculture means. We must address every step of production: seed standards, soil and nutrient management, irrigation techniques, pest management, plant protection, plant guiding, harvesting, and post-harvest handling. Organic urban agriculture also tackles aspects on agrobiodiversity, climate smart agriculture techniques, and the question of locally adapted varieties. It could therefore be the quality standard for horticulture production within a more sustainable urban Food System.

## References

- Battersby Jane. (2011). "The State of Urban Food Insecurity in Cape Town." Urban Food Security Series No. 11. Queen's University and AFSUN: Kingston and Cape Town.
- City of Maputo (2016). Plano de Acção de Produção Agrária e Pesqueira – 2017. Maputo
- Crush, J, Raimundo I a. W.Pendleton (2014): "The State of Urban Food Insecurity in Cape Town." Urban Food Security Series No. 20. Queen's University and AFSUN: Kingston and Cape Town.
- Food and Agriculture Organization (2010): Growing Greener Cities. Rome Eigenbrod C.a.N.Gruda (2015): Urban vegetables for Food Security in cities. A review. In: Agron. Sustain. Dev. 35:483–498.
- Lorenz Klaus (2015): Organic urban agriculture. In: Soil Science. Volume 180, Number 4/5, April/May 2015.
- Mougeot, L. J. A. (2000), 'Urban agriculture: Definition, presence, potentials, risks and policy challenges', Cities Feeding People Series, Report 31.
- Schmutz U., J.Wright and M.Lennartsson (2014): Urban Horticulture and organic greenhouse standards. Acta Hort. 1041: 281-286.
- Van Veenhuizen, R. (2006). Cities farming for the future. In: Van Veenhuizen, R. (ed.). 2006. Cities farming for the future, urban agriculture for green and productive cities.
- Viljoen A. u. K.Bohn (2014): Planning and designing Food Systems. Moving to the Physical. In: Sustainable Food Planning. P.385-392. Wageningen.

# **Sustainable Food Production in a Food Deficit Region: The case of Kudumbashree as a Community Self Organisation in Kerala, India**

**Christabell P J**

Assistant Professor, Department of Futures Studies, University of Kerala

Email: christabell@keralauniversity.ac.in

---

## **1. Introduction**

Food production needs to be sustainable in nature in order to sustain the burgeoning global population as well as to help them to lead a healthy life. Obviously, it has become a responsibility of the society to carry on sustainable agricultural practices in their respective localities so as to achieve the food and nutritional security and to ensure the regular supply of 'safe to eat' food. The regional economies on the earth have recognised this fact and have started giving utmost importance to address the concern. Consequently, different initiatives have been launched all over the world with the intention to sustain production of food in local areas by means of government interventions, community networks, local organisations, etc. One such innovative initiative is launched by Kudumbashree Programme of Kerala in India by mobilizing females into farming activities and thereby ensuring food security, production of nutritious food and enhancing livelihood of the vulnerable sections of the society. The present paper attempts to evaluate various dimensions of Kudumbashree's initiatives on sustainable food production as a Community Self Organisation in the specific context of a developing country.

## **2. Kerala: The Food Deficit Region**

Kerala, the south Indian state is a lush green region which constitutes a long strip of land bound by Arabian Sea in the west and by Western Ghats in the east. Even though the region enjoys a rich monsoon and a favourable agricultural climate, the production of various food grains, pulses, vegetables, fruits and other edible items has been under tremendous stress. For example, in the case of rice which is the staple food of the region, Kerala has a long history of deficit, which has increased steadily from 45 per cent to 85 per cent between 1957 and 2008, which was due mainly to a large scale decline in the area and production of paddy. Apart from that, the labour cost of production of paddy is exorbitantly high i.e., about 60 to 70 per cent of the total cost of production in Kerala compared to other States (Manikandan 2011). This in turn results in the lowest per capita food grain production among all the states in India.

On the other hand, when it comes to the specific case of fruits and vegetables, the bulk of its demand is met by the neighbouring states while the domestic production falls below 50 percent of the total demand. The most cited reason for this situation is the cropping pattern in Kerala which in turn is unrealistic to expect food self-sufficiency (Kannan 2000) as it is highly biased towards cash crops such as spices and rubber. The other reasons are high density of population, rapid urbanisation, increasing cost of cultivation, etc over the last decades and still the same conditions are continuing. All the above mentioned studies and evidences point to the fact that food deficit in the region is as chronic as it leads to shortages in the supply which in turn prompts hoarding, increase and fluctuations in prices of food items (GoK 2012a).

## **3. Kudumbashree: The Community Self Organisation in Kerala**

On the social side, the federal state of Kerala is considered to be one of the most egalitarian states in India; still large inequalities persist among castes, gender and social groups. To empower these sections, especially the women, the Government of Kerala introduced the Kudumbashree Programme in 1998 with financial support from National Bank for Agriculture and Rural Development (NABARD) and the Central Government. In 2011, the Ministry of Rural Development (MoRD), Government of India recognised Kudumbashree as the State Rural Livelihoods Mission (SRLM) under the National Rural Livelihoods Mission (NRLM). The prime objective of the programme is to eradicate absolute poverty and ensure livelihood of the vulnerable sections from the state by actively involving the poor in planning, managing and monitoring of programmes for their own development. The core activity of Kudumbashree is to empower women through microfinance, microenterprise and convergent community action (Chathukulam 2002). Hence, from the very beginning, the programme has promoted microenterprises to enhance livelihood for poor women below the poverty line throughout the state.

The programme also envisages establishing an 'Informal Bank of the Poor' at local body level under three-tier system, to act as a sub-system of the formal banking sector (GoK 2012b).

Soon after the inception of the programme in 1998, Kudumbashree community network was extended to cover the entire State in three phases during 2000-2002. As a result, the programme has emerged as the largest female collective in Asia with a total membership of 43,06,976 women. . The membership to Kudumbashree is open to all adult women, limited to one membership per family. According to the statistics as on 15th March 2017, the programme had facilitated 2,77,175 neighbourhood groups (NHGs- basic unit of the programme comprising women from 15 to 20 families with vulnerabilities on social and economic fronts) which are in turn affiliated to 19,854 Area Development Societies (ADSs- the unit at the middle level or at the ward level) and 1073 Community Development Societies (CDSs-the apex unit at the local government level). Apparently, now the programme is considered as the most successful and the largest community self organisation in the state till date.

The members of the group are encouraged to cultivate the habit of thrift and the small savings of the members are collected on a regular basis and deposited in banks which were further augmented by loan/grant/subsidy etc. from other sources like central government and other financial institutions (Suresh 1998). The programme also acts as the State Level Nodal Agency to implement major centrally sponsored programmes which aims at alleviation of poverty. A number of schemes on physical and social development and direct assistance to employment generation are taken up under the aegis of Kudumbashree at various periods after its inception. In short, the programme organizes the vulnerable sections in the society by facilitating community based structures of underprivileged women with the support of the local self governments at the grassroots level.

#### **4. Milestones in the Way towards Sustainable Food Production**

In 2004 Kudumbashree has entered into the agricultural sector with female farmers as the focus to enhance food production by means of a programme named lease land farming. The lease land farming initiative promoted the concept of group farming by forming joint liabilities groups comprising of less than ten female farmers. Most of the farmers include the category of landless agricultural labourers and a minimal number comprising of small and marginal farmers. As the landless members do not possess land of their own, they are encouraged to lease land for conducting agricultural activities. The collectives thus formed leased fallow land in their local area, rejuvenated it, farmed it and then either sold the produce or use it for consumption, depending on the needs of members (Mukherjee 2012). The project which aimed at ensuring livelihood to the landless female farmers was in vogue till March 2010.

From April 2010, in order to encourage cultivation among NHGs, an initiative on collective farming was introduced by Kudumbashree. The project has been renamed to collective farming as the concept of Joint Liability Group (JLG) of NABARD has been adopted. For the smooth functioning of the activities, Kudumbashree has formulated guidelines for formation of farming JLGs. The programme aimed at bringing in noteworthy changes in the lives of the poor and to provide livelihood to the female farmers. In addition to the said objectives, the initiative helped to increase agricultural production by bringing fallow and cultivable waste land into agricultural use and has brought significant changes as a food security measure. The programme which was implemented in all districts of the state with the support of local self governments in turn helped the women to enter the programme as cultivators rather than agricultural labour. They could also bring in control over the means of production and access to formal credit help in increasing the returns from farming. It is claimed that nearly 44,000 hectares of land utilizing cultivable fallow land by the collectives comprising of 0.245 million women were formed (Kudumbashree 2012).

In 2011, the collective farming initiatives were brought under the centrally sponsored programme called Mahila Kisan Sashakthikaran Pariyojana (MKSP) which means the Programme for Empowerment of Female Farmers under the National Rural Livelihood Mission of Ministry of Rural Development which in turn aims to empower women in agriculture. MKSP is in turn a centrally sponsored project aimed at improving the capacities of women in agriculture to access the resources of other institutions and schemes in a convergence framework. The major objectives of the project include: to create sustainable agricultural livelihood opportunities to the female farmers, to ensure food and nutrition security at the households and communities, to improve the skills and capabilities of women in agriculture to support

farm based activities, and to enhance the managerial capacities of women in agriculture. The project area covers four states in the country and Kudumbashree having one of the biggest project outlays of Rupees 79.9 crores covering 1,50,000 farmers. As per the latest statistics, 2,23,000 women farmers have come together in 50100 groups to conduct the agricultural activities throughout the state. The conscious emphasis on safe to eat concept and adoption of organic farming practices make the activity more socially meaningful too. Furthermore, the group dynamics of women help the activity to sustain. Though income from the activity is not high and though it is not a profitable business, it is just sufficient to help the women to carry out the activity.

## **5. Dimensions which Ensures Sustainability**

Though it is a programme introduced using a top down approach, the sustainability lies on a range of dimensions. The main actors of this initiative, the female farmers, made it clear that it is their participation and enthusiasm which helps the programme to run successfully and sustainably. The diverse dimensions are discussed in brief hereafter.

**Change in attitude:** In rural settings, farming in any form continues to be predominantly a male oriented activity in most parts of Kerala, although, in many places in the state, women are found to cultivate vegetables on their own in their homesteads, terraces, etc. When it comes to special case of commercial farming, women act as helpers in the field rather than show themselves as agribusiness personnel. There is a widespread belief that women cannot cultivate vegetables like bitter gourd and snake gourd as they need heavy labour or conduct paddy cultivation on their own. There is also a general feeling that they cannot undertake certain activities like spraying pesticides or heavy land preparation/development activities. But the innovative experience of Kudumbashree shows that the participation of females in farming as entrepreneurs has increased in recent times.

**Convergence of various actors:** The female farmer clusters visited and studied in different parts of the state have framed a unique model of converging MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act which guarantees hundred days of employment funded by Government of India), JLG (Joint Liability Groups), Kudumbashree loans, contract farming, etc under one umbrella and started cultivation in those areas where it was not hitherto done. Preparation of land before cultivation is an expensive activity. A lot of labour is needed for this work. Hence in some of the places, machines have been substituted for the work. In some areas, the land preparation was conducted by the panchayat (local government) authorities using the MGNREGA workers. For those farmers much expense has been met by the *panchayat*. There is much difference in expenditure incurred for land preparation of garden land and wet lands. As all agriculture lands are fragmented, use of tractors and other machines are restricted in some places. They are forced to use labourers at high cost in these cases.

**Learning experience:** Agriculture is a seasonal activity. For example, in most parts of the state, the ideal climatic condition prevailing for vegetable cultivation is from January to March. The livelihood of the farmers for the rest of the period is to be taken care of. Most of the female farmers in the JLGs were known to each other before the formation of the clusters, but after forming clusters they have learned to work together by sharing information. The women join together and bring fallow land, waste land, lease land under cultivation. They undertake the activities under common agreement. They water the plants as per the pre fixed time tables. They market their produces on their own. They keep accounts and share the profit. Now they have understood that they will be able to go a long way together. Female farmers wanted to have small hand-held machines for digging land and for land preparation. The main factor escalating the cost of cultivation was expenditure incurred on land preparation. With the help of the small machinery, farmers feel that they will be able to manage for themselves without hiring labour.

**Financial support is key:** If support is provided to the farmer JLGs, the female farmers feel that they will be sustainable. Adequate finance is needed; better protection measures are to be advised by the agriculture experts. For financial security of the group, they expect a lot from the government in terms of timely disbursement of subsidies and insurance coverage. They vouch that they will remain a cluster if the government infrastructure provides them more support and coverage.

**Framing new institutional patterns:** Majority of the farmers in the study area are found to be cultivating vegetables in paddy fields as intermediary crops. But in some of the places the farming activity is conducted in garden land too. As far as garden type of land is concerned, that is being used for

alternative uses (such as housing and real estate) and so its availability is scarce nowadays. Another reason is that land preparation is difficult in those lands as the terrain need not be plain and are mostly fragmented in nature. Hence the cost of cultivation is high while cultivating in the garden lands. The clusters visited include farmers both owning and leasing land. Whenever own land is not available, land will be taken for lease. The lease amount is charged by the owners based on availability of water and other factors such as accessibility to road and market places. In different places, the lease amount changes depending on the quality and facility of land. When demand for land for agriculture purpose is increasing, the lease amount is also increasing in all parts of the state. The farmers usually lease land for banana cultivation and cultivate other crops as mixed crops in the fields. Until the canopy of banana comes up, the farmers can do vegetable farming underneath. It is also found that as the competition existing in paying higher lease and acquiring lands, some landlords want to get rid of the farmers so that they can use the land for other purposes.

## **6. An Appraisal of the Programme**

As a community self organisation working among the women in the state, farming activity has naturally become one of the main focus areas of the Kudumbashree Programme. In other words, one can find that it is a community managed extension service and acts as a knowledge and service point at every village regarding the farming activities. All the planning and monitoring of JLG activity is done meticulously at the grassroot level and the machinery support for agriculture groups is assured by the MKSP. The extension services from the officials are provided in terms of supply of adequate inputs, training and capacity building and credit support to the female farmers whenever it is necessary. This is evident from the fact that as part of the programme, 10,000 women master farmer were selected, trained and placed to cater to the needs of other farmers in the locality. The most positive side is that there is convergence with agriculture department and local self governments. A total of 12,000 groups were linked with the formal credit worth Rupees 130 crore, a robust system for loan issuance and monitoring is maintained, a constant capacity building and skill is imparted on a continuing basis.

On the marketing side too, the support is evident. The village level weekly and monthly markets are maintained and a clear convergence with various government agencies for procurement is ensured. As a result an amount of Rupees 50 crore of sales through festival fairs could be made. Apart from the various market intervention activities, various initiatives on value addition are incorporated in the programme like processing of paddy, cut vegetable units are set up, preparation of value added products like jam, pickles, chips are boosted up.

## **7. Concluding Remarks**

Although ensuring the food security and enhancing food production in the regional economy were the prime objectives of the Kudumbashree Programme, it also delivered numerous other results. It helped the women from poor families to supplement their family income by providing with sufficient inputs for agriculture production. It is reported that there is a substantial increase in the income of the farmers and on average an estimated amount of Rupees 50,000 per year from this activity is realised. This is a much higher amount as compared to the target of Rupees 33,000 set by the MKSP project. In a nutshell, The community self organisation kicked off under the aegis of Kudumbashree could assimilate the idea of sustainable food planning and food production among the female farmers from various parts of the state. Alternatively, it also has instilled a ray of hope to the food deficit region of Kerala as a whole.

## References

- Chathukulam, Jos. 2002. Building Social Capital through State Initiative: Participatory Planning in Kerala. *Economic and Political Weekly*. 37(20) pp. 1939-1948.
- GoK. 2012a. Report of Working Group on Food Security. Kerala State Planning Board, Thiruvananthapuram.
- GoK. 2012b. Ensuring Food Security through Group Farming in Paddy Cultivation: A Case Study of Nedumbassery Grama Panchayat in Ernakulam District. Working Paper Series 2, Evaluation Division. Kerala State Planning Board, Thiruvananthapuram.
- Kannan, K. P. 2000. Food Security in a Regional Perspective A view from 'Food Deficit' Kerala. Working Paper No. 304. Centre for Development Studies, Thiruvananthapuram
- Kudumbashree. 2012. Collective farming and Kudumbashree: Base line study of JLG and Agriculture practices. State Poverty Eradication Mission, Kerala.
- Manikandan, A. D. 2011. Food Deficit in Kerala: Exploring the Possibility of NREGS. *Mainstream*, Vol. XLIX, No 14, 22.
- Mukherjee Ananya. 2012. A Quarter of a Million Women in Kerala Earn Livelihoods With Dignity. *Universitas Forum* 3(1) February.
- Suresh, K. A. 1998. *Organisational Alternatives for Development - A Search for an Organisational Theory and a Few Cases*. Thrissur: Kerala Agricultural University.
-

# Urban agroecology: An exploration of gendered information pathways and place-making

Megan L. Resler and Sophia E. Hagolani-Albov

Department of Agricultural Sciences, University of Helsinki, Finland

Email: [megan.resler@helsinki.fi](mailto:megan.resler@helsinki.fi) and [sophia.hagolani-albov@helsinki.fi](mailto:sophia.hagolani-albov@helsinki.fi)

---

**Keywords:** Urban agroecology; food citizenship; gender; sense of place; civic agriculture

---

**Abstract:** Recent trends in urbanization have contributed to re-defining urban demand and rural supply across the global agricultural landscape. These dynamic interactions occur within both formal agricultural economies, as well as within informal networks of non-commodity exchange. If we consider the development of food citizenship as one product of non-commodity exchange, which exists as an embedded manifestation of these informal networks of sharing, then we are led to question the factors which shape sense of responsibility to place. Our research explores the question: are gendered spaces significant in these non-commodity exchanges, and if so, can these pathways be exposed to inform development strategies which strengthen and diversify urban agroecology? Framed by the exploration of urban agroecology as both a science and a movement, this research probes gendered discourse pathways, and the implications for the development of food citizenship in these urban spaces, across two city-sponsored urban agriculture networks: The P-Patch Community Gardening Program in Seattle, Washington and the Allotment Gardens of Helsinki, Finland. As both garden networks are embedded within each city's respective development plan, these sites offer the distinct benefit of probing civic responsibility and active engagement within civic agriculture outside of the discourse of food production for self as a political act. We employ an interdisciplinary approach to our research methodology which draws from the disciplines of planning, human geography, sociology, and agroecology. Our data is collected and analyzed utilizing primarily qualitative methods including interviews, photography and participant observation. We anticipate that the identification of gendered exchange pathways within urban agroecology can be used to inform the development of localized food systems outside of strictly market-based interactions.

## Introduction

Historically applauded for their ability to increase crop yields, the oil-based synthetic inputs of the Green Revolution remain integral to the foundation of our contemporary specialized industrial food economy (Pingali 2012). As the industrial agricultural model continues to necessitate the integration of fossil-fuels in the production, transport, and consumption of food at a global-scale, this system works to disproportionately reduce autonomy amongst small-scale food producers, increase the financial burden of synthetic inputs, govern ecological systems as mechanical systems, and increase spatial, temporal and ethical distance between food consumption and production (Kloppenburg et al. 1996, Anderson 2008, Godar 2015).

The discipline of agroecology, as a social movement and natural science, proposes promising and innovative alternatives to food production, which actively seek to raise economic profit, ecological interaction, and facilitate development of socially just agricultural models (Gliessman 2015). There is a clear connection between the integration of agroecological management and the promotion of ecosystem services, together with the potential to result in comparable, if not increased, crop yields (Deguines et al. 2014, Pywell et al. 2015). However, the dominant social discourses in the globalized agricultural system place extraordinary value upon growth within neoliberalist economic policy. To effectively navigate potential pathways toward sustainable food system transformation, exploration and scholarship must be undertaken which operates outside these dominant paths and discourses. To this end, our research examines non-commodity exchange in agricultural systems which are operating beyond the immediate influence of market forces.

While often indicative of the potential for positive change, the overwhelming majority of existing agroecological literature considers the integration of diversified farming practices within a rural context aside from a few notable exceptions (Rosset & Martínez-Torres 2012, Wezel et al. 2014, Gliessman 2015, Tornaghi 2014). Recent trends in urbanization have made a significant contribution to the re-definition of

urban demand and rural supply across the global agricultural landscape (van der Ploeg 2008). Our research attempts to probe the manifestation of distinctly urban agroecology practices, knowledge sharing, pathways, and non-commodity exchange within a metropolitan context in the Global North (GN).

We utilize the concept of food citizenship as one form of non-commodity exchange which exists as an embedded manifestation of an informal network of knowledge sharing across urban agricultural landscapes (Winklerprins & Perpetuo 2005). Citizen engagements with agroecology in urban spaces, create spatial and temporal affordances for knowledge sharing to occur while allowing the dynamic development of social discourse to be nourished by civically aware agents of action. A localized food system cannot be achieved solely through market-based interaction. The development of sense of place through agriculture, or what Lyson (2004) initially describes as civic agriculture, also becomes a valuable non-commodity generated within these diverse urban agricultural landscapes., As DeLind and Bergin (2008, 130) so aptly expressed, “our ability to understand and practice ‘being’ in place,” is needed to create a localized food system.

The two case studies, the P-Patch Community Gardening Program in Seattle, WA and the allotment gardening network in Helsinki, Finland, indicate preliminary results of noteworthy alternatives to the capitalist, neoliberal fabric of urban life in the GN, and in doing so, suggest the power to engender civic awareness and engage citizens with the process of place-making.

### **Civic agriculture and sense of place**

Lyson (2004) introduced the concept of civic agriculture, as a diverse range of food activities with which dissatisfied individuals can engage as act of resistance to a system of control that is misaligned with their values. Examples of resistance-driven action are prevalent in urban agricultural landscapes across the GN and Global South (GS), including farmer’s markets, U-Picks (self-harvest from farmer’s field), CSA’s and food circles, among many others. These activities, he claims, are a response to the disaffection caused from the removal of sense of place in the globalized industrial agricultural model (Lyson 2004). In response to Lyson’s rendering of civic agriculture, DeLind and Bergin (2008) argue that the problem with the dominant civic agriculture narrative is the tendency to search for transitional pathways towards a decentralized and diversified food system through creative consumer-producer interactions (which support smaller production intended for a ‘geographically distinct population’). Yet, these novel interactions ultimately still fall within the boundaries of our contemporary market-based relationship of consumer/producer (Renting et al. 2012). Forward-looking research within the nascent exploration of urban agroecology, would be remiss to skip investigation of the potential of transformative new relationships which fall outside a strictly market context.

Furthermore, a common thread among narratives exploring sense of place continues to be the development and nourishment of relationships between citizens, which result in identity formation and civic activity (Gaventa 2002; Hassanein 2008). Our research, utilizing the applied projects from two distinct case studies, will call into question the ability of civic relationships, both with others and self, in assisting with place-making, personal identity formation, and the ability to engage as an active food citizen. In doing so, the bridge between food citizenship and sense of place I, offers potential insight on how pathways of knowledge exchange and the parameters of civic responsibility, in urban agroecology, might inform development strategies to strengthen, diversify, and bring to scale urban agroecological spaces.

### **Applied research: Seattle, Washington and Helsinki, Finland**

Motivations to participate in UA have varied over the course of the 20th century, from the World War Two victory gardens to self-cultivation as a path to environmental sustainability, among a myriad of others (Bassett 1981). Recently, UA has often been introduced to metropolitan areas across the GN through grassroots initiatives; However, Seattle and Helsinki have formally included these gardens in their urban development plans (Hou et al. 2009; Albov 2015). Our two case studies examine engagement



with UA outside of that which occurs in interstitial spaces, or “more or less conflictual projects reclaiming the land for food production” (Tornaghi 2014, 557). This research explores institutionally supported UA land made available to the public.

Under the umbrella of the Department of Neighborhoods, the Seattle P-Patch Community Gardening Program (named to commemorate the family who owned the farm on the first community garden site) has overseen the horticultural use of public green spaces across the city since 1973 (seattle.gov 2017). Specific language of agroecology as a practice or a social movement is not explicitly woven into the city-mandated regulations of the P-Patch Program. However, all plots are managed organically. The focus on organic management and organic practices serves to support agroecological agriculture, even if it is not explicit. The network extends across 90 gardens, 3,055 plots, and over 6,800 gardeners, as of December 2016 (seattle.gov, 2017). Managed not only as a response to questions of food insecurity and sovereignty, the P-Patch Program explicitly markets this network as an attempt to “nurture civic engagement, foster an environmental ethic, preserve heirloom species... and cultivate a budding understanding between generations and culture through gardening and cooking” (seattle.gov 2017).

*Figure 1: Similarities and differences across our two case sites.*

	Seattle community network	P-Patch garden	Helsinki allotment garden network
Public spaces	x		x
Garden space integrated into urban plan	x		x
Gardener discretion of cultivation strategy at individual plot level	x		x
Uniform agricultural management guidelines	x		
Garden-specific agricultural management guidelines			x

The Helsinki allotment gardens, much like the P-Patch network of Seattle, are institutionalized at the municipal level (Albov 2015). Owned by the city and categorized as public parkland, these gardens are leased to their individual management boards through 2026 (City of Helsinki 2014). There are currently 39 allotment gardens in Helsinki, but there are no overarching figures for an exact number of gardeners. Unlike the P-Patch network, the Helsinki allotments are not strictly managed by one municipal entity, therefore have a more fluid set of agricultural management regulations which are customized by the boards of appointees for individual gardens. In addition to the allotment gardens, there are also cottage allotments, community gardens managed at a housing block level, and gardens in interstitial space freely shared by the city. However, for purposes of this research we will focus only on the allotment gardens which are called *kaupungin viljelypalsta*, which translates directly as ‘the city’s farming plot.’ The zoning designation and the role of the gardens within the city planning strategy are the closest comparison to the gardens in our Seattle case study.

## Methods

We employ an interdisciplinary approach to our research methodology which draws from the disciplines of planning, agroecology, sociology, and human geography. Qualitative methods of data collection utilized in this article include semi-structured interview and participant observation at community gardens. This research grew out of an initial investigation into the urban agricultural landscape in Helsinki conducted in 2015 (Hagolani-Albov 2017a, Hagolani-Albov & Halvorson 2017). The themes uncovered in the 2015 research paved the way for informing the 2017 research. The first interview and participant

observation was conducted in Seattle in the first half of summer 2017. Data collection at the second case site is being conducted in the second half of summer 2017. The results herein are based on the preliminary data analysis.

Interview candidates in Seattle and Helsinki were chosen based on a series of discrete criterion including 1) urban food producer, 2) active member of their respective urban gardening networks and 3) over the age of 18. A call for participation was distributed via the Seattle P-Patch Community Gardening network's e-mail listserv. Of an unknown number of food producers contacted, 22 individuals expressed interest in participating in a 30-60-minute semi-structured interview in the P-Patch plot they tend. Of the 22 interested participants, 10 completed interviews, 3 were deemed ineligible to participate due to their inactivity in the P-Patch network, 3 did not follow-through in correspondence, and 4 interviews were unsuccessful due to scheduling error. A gendered breakdown of interested participants show 77% as female-identifying, as well as 80% of interviewed participants as female-identifying. Interviews were conducted at 10 of the 90 community gardens within the P-Patch network.

Plot-tenders led the researcher through their gardens, while engaging in a semi-structured interview on their experiences with urban agriculture (UA) and agroecology. Eight female-identifying food producers and 2 male-identifying food producers were interviewed during June 2017. From each interview, an audio recording was captured, P-Patch gardens were photographed through an ethnoecological lens, and a typed transcript produced. Transcripts were coded in AtlasTI utilizing the thematic qualitative analysis framework introduced by Boyatzis (1998). Falling within a post-positivist research paradigm, this method of qualitative analysis reflects our inductive approach to pattern-seeking.

### **Considerations of language and gender**

The incorporation of language which is inclusive of urban food producers who identify outside of the gender binary system of categorization (i.e. male or female) remains negligible from existing feminist political ecology literature which explores the nexus of gender relations and UA (Buckingham 2005). This proves to be problematic within a larger discussion of distributional and procedural justice in urban agricultural practices and municipally-sponsored programs across all members of a community, this research team has attempted to be explicitly mindful of inclusive language and avoidant of binary categorization in interview interactions. Complicated by the use of gendered pronouns in the English language (i.e. 'he/she' as personal pronouns utilized to refer to two discrete genders, 'his/hers' as possessive pronouns used to refer to two discrete genders) and gender-neutral pronouns within the Finnish language (i.e. 'hän' as the only personal pronoun used to refer to people of all genders, 'hänen/hänet' as the only possessive pronoun used to refer to people of all genders), multiple native-speakers of each tongue were consulted for appropriate and responsible use of the pronouns in question.

### **Initial data analysis**

An initial thematic analysis of the data collected from the Seattle interview series has revealed a number of patterns worth exploration within the context of urban agroecology, food citizenship, and gendered pathways as a facet of place-making. Among the most dominant include associations between urban space and agroecology, the role of social discourse in shaping civic responsibility, and the presence of gendered pathways of knowledge flow. It must be noted that the sample of participants who responded to our call for action were inclined to civic engagement in their communities, and perhaps not representative of average civic engagement amongst P-Patch tenders network-wide.

### **What draws agroecology to urban landscapes?**

Inherent in the practice of agroecology, as both a social movement and natural science, is the ever-present theme of diversity and resilience (Gliessman 2015). By prohibiting the use of the synthetic chemical inputs which dominate the large-scale conventional agricultural model that arose post-Green Revolution, the municipally-sponsored P-Patch Program inadvertently, yet systematically, integrates

agroecological management practices into the Seattle community gardens. The result of this systemic integration is the formation of innovative solutions to distinctly urban agricultural problems. One of the founders of a P-Patch garden hidden atop one of downtown Seattle's prominent parking garages, recounted her experience with urban soil science:

*I had over half of our gardeners submit their soil for testing last fall. I've been meeting with King County Conservation to find out more about what we can do. Most places that deal with soil, deal with soil that's in the ground. Well, we're in containers so nutrients wash out faster. It's just a whole different science and they're just starting to look at it now that we're having more rooftop gardens...that's something I want to learn more about- how do we improve our soil. Because it will make more people successful and they will stay longer. And we will have more food... (Interviewee 6).*



*Photograph 1: Surrounded by cement, this P-Patch garden is on the top (5th floor) of a parking garage in the heart of downtown Seattle.*

Given fluid/flexible plot management standards across individual allotment gardens of Helsinki, forthcoming analysis from data collected at our second case site will explore the presence of agroecological management practices in gardens where they are not municipally-mandated. In addition to the possibility (and perhaps requirement) of innovation in upcoming urban agroecological research, Interviewee 3 explains the spatial and ecological opportunities which intra-Patch communal spaces afford to P-Patch tenders:

You end up sharing with a lot more people because things that we normally couldn't grow at home, are possible here with the larger communal space[s]. And you see how much more room there is for putting in more things, we just put in a kiwi, blueberries, rhubarb that we all use, raspberries. So it creates a place to get food that would otherwise not be viable in your plot at home or your small plot here.

This type of spatial opportunity open doors for not only new ecological interactions and wildlife dispersal corridors, but also new pathways for social discourse within and between P-Patches, as well as new leadership opportunities for community events and project management (Wezel et al. 2014, Gliessman 2015). All of which, together, can be seen as stepping stones towards what DeLind and Bingen (2008) call the development of 'civic awareness and action,' in the P-Patch and allotment garden contexts. This awareness and action serve as a prerequisite for the development of a sense of civic responsibility to a particular place.

### How does social discourse shape civic responsibility?

Post-structuralist thought tells us that people make sense of the world according to the discourses available to them (Denzin 1994). As qualitative researchers and writers, poststructuralism also prompts us to remember that we are writing from a specific position at a specific time, which will continue to be shaped by future discourse as we engage with new information and new knowledge (Denzin 1994). Arising from this distinct spatial and temporal location, we do see evidence of verbal social discourse and non-verbal horticultural knowledge transmission in garden settings influencing the social norms which dictate community stewardship. One respondent tasked with the responsibility of monitoring plots for inactivity, succinctly explains, “When a bed is bad, it affects everybody around it” (Interviewee 6).



Photograph 2: Messy beds and overgrown pathways set a tone for the overall appearance of the garden (left) and have an influence on the sense of responsibility that gardens have toward the overall space. The role of placemaking is influenced not only by the surrounding areas but also the aesthetic qualities of the garden (right).

The *campesino-a-campesino* (CAC, translated as ‘farmer-to-farmer’) methodology proposed by Holt-Giménez (2001) sheds light on this phenomenon. CAC explains that food producers are more willing, and likely, to “emulate a fellow farmer who is successfully using a given alternative” when they see this success first-hand (Rosset & Martínez-Torres 2012, 6). Conversely, observed inactivity within gardens has resulted in an unwritten acceptance of said inactivity.

DeLind and Bingen (2008, 129), explain that “civic belongs to all people as inhabitants of places. It emerges from lived experiences, shifting relationships, and common cause. It is the culture of shared understandings and responsibilities...” The lived experience of Interviewee 8 echoes this theoretical framing, “The garden community has peaked right now in the summer so I feel like it is a presence all the time. I feel like I am doing my part.”

The complex implications of the dynamic social discourse described above, result in shifting conceptualizations of the geographic imagination of civic responsibility. Another respondent shares a story on how intra-Patch community events influence the activities in the food bank garden she manages at her P-Patch. She explains:

[Our garden] hosted an event where they offered us a potluck on a beautiful summer evening and then we would do a harvest for them. You learn a lot when you harvest in someone else's garden. How they harvest and how they prep the food for the food bank, so hugely informative. (Interviewee 1)

As new urban agroecological solutions and activities are transmitted between and across Seattle P-Patch gardens, standards of responsibility to both the garden and the community are re-enforced and re-written. Upcoming interviews in our second case site will continue to explore these emerging phenomena in the context of the Helsinki allotment gardens.

### Emerging gendered pathways of knowledge and discourse development in UA

Drawing from feminist political ecology and ecofeminism, this research seeks to explore the potential for gendered pathways of discourse transmission within urban agricultural spaces. What the preliminary

results from the Seattle interview series do suggest; however, is an increased willingness between the female-identifying food producers in our initial data set to share horticultural knowledge, ideas, and ask questions of one another. Interviewee 7 shares her perspective:

*It's an understood thing that women are more likely to share their knowledge than say, a gentleman, or anyone who is of the masculine derivative. So if we're in here, and we don't have exclusively female plot tenants, but if we're who is here, we'll just say 'Oh do you want a pumpkin plant?' I got one from a lady last year. So we share that, we'll share our frustrations like 'I don't know why my broccoli isn't doing anything,' so you learn things that way. So I feel like we're far more likely to share our knowledge...*

Outside of pathways for information transmission, Interviewee 6 notes a gendered dimension to the development of interpersonal relationships at community gardens. She explains, "As a woman, being a nurturer is something that people are more comfortable with. The gardeners here share things with me that they probably don't share with any other people when they are going through a hard time..."

Previous investigation on gender relations in allotment gardens in the U.K. has suggested, "the way in which produce is grown appears to have a gendered dimension... interviews suggest that the women who garden are less likely to follow the accepted 'science' of domestic food growing," (Buckingham 2005, 174). If we assume Buckingham's usage of the phrase 'accepted science of domestic food growing' to include conventional input-driven home garden management practices, data from the Seattle interviews with women do indicate a willingness to experiment with stewardship practices that fall outside of this limited box. While our interviews with male-identifying P-Patch participants do express a reduced willingness to experiment outside of the horticultural activities they were raised with, we are unable to draw any preliminary conclusions at this point given the small sample size of participating male-identifying food producers.

One woman, who was raised on a subsistence farm in Paraguay, explained, "We always go away from natural knowledge, and old wives' tales and poo-poo it scientifically- but then sometimes we come back and say, 'Oh I get why now, moving forward, why that made sense and why it mattered,'" (Interviewee 3). As a natural science, the discipline of agroecology accepts and actively seeks to integrate indigenous and place-based knowledge and management practices into food production landscapes (Gliessman 2015). Interviewee three's claim above is indicative of how urban agricultural experimentation and exploration, by both men and women, may result in innovative, and place-based, daily urban agroecology. Forthcoming interviews conducted at our second field site will continue to probe participant willingness to share information and knowledge between and across genders, as well as explore gendered patterns in garden stewardship practices.

### **Next Steps**

The themes discussed in this paper are based on the findings from the interviews at the Seattle case site. These initial interviews were exploratory in nature and utilized broad questions to allow themes to develop organically. For the next step of this research, we have reassessed the composition of the interview questions to dig deeper into the more specific themes of gendered information pathways and the role of gendered placemaking. In light of these emergent theme, the interviews in Helsinki will more directly interrogate the questions of how information is shared in the garden. This will include discussions of who sharing information, with whom, and what types of information are being shared. Specifically, we will use the Helsinki case site as an opportunity to deeply investigate how gender identity influences the process of placemaking in a non-market based, local food system. These findings are anticipated to illuminate the types of individuals and the potential role that gardeners could play in the process of food system development at a local, non-market level. Particularly to inform urban development and spatial planning strategies which strengthen and diversify urban agroecology in non-market, localized food systems.



## Acknowledgements

We would like to extend our sincere gratitude to the urban gardeners who have warmly welcomed us into their garden plots and the ones that will. In addition, we would like to thank our supervisor, Juha Helenius, for his guidance in the trajectory of our applied research.

## Funding

This research was supported by the University of Helsinki's Friends of the Environment Fund and the Cooperative Teaching and Research Fund.

## References

- Albov, S. E., (2015). (Re)Localizing Finland's Foodshed: Grassroots Movements in Food Distribution and Urban Agriculture, MSc Thesis, University of Montana. Available from Scholarworks: Paper 4542. [Retrieved January 26, 2017].
- Anderson, M.D., (2008). Rights-based food systems and the goals of food systems reform, *Agriculture and Human Values*, 25, 593-608.
- Bassett, T.J. (1981). Reaping on the margins: a century of community gardening in America. *Landscape*, 25(2) 1-8.
- Boyatzis, R.E., 1998. Transforming qualitative information: Thematic analysis and code development. Sage.
- Buckingham, S. (2005). Women (re) construct the plot: the regeneration of urban food growing. *Area*, 37(2), 171-179.
- City of Helsinki. (2014). Allotment Gardens. Retrieved on August 2, 2017, from <http://www.hel.fi/www/Helsinki/en/culture/leisure/cottages/allotmentgardens/>.
- City of Seattle. (2017). About the P-Patch Program. Retrieved on May 25, 2017, from <http://www.seattle.gov/neighborhoods/programs-and-services/p-patch-community-gardening/about-the-p-patch-program>.
- Deguines, N. et al. (2014). Large scale trade-off between agricultural intensification and crop pollination services, *Front Ecol Environ*, 12(4), 212-217.
- DeLind, L. & Bingen, J. (2008). Place and civic culture: re-thinking the context for local agriculture, *Journal of Agricultural and Environmental Ethics*, 21(2), 127-151.
- Denzin, Norman K. (1994). Handbook of qualitative research. Nachdr. ed. Thousand Oaks, Calif. [u.a.]: Sage.
- Gaventa, J. (2002). Exploring citizenship, participation and accountability. *IDS bulletin*, 33(2), 1-14.
- Gliessman, S. R. & Engles, E.W. (2015). *Agroecology: The ecology of sustainable food systems*; 3. Ed. Boca Raton: CRC Press.
- Godar, J. et al. (2015), Towards More Accurate and Policy Relevant Footprint Analysis: Tracing Fine-Scale Socio-environmental Impacts of Production to Consumption, *Ecological Economics*, 112, 25-35.
- Hagolani-Albov, S.E. (2017a). Urban Agriculture in Helsinki, Finland. *Focus on Geography*, 60, doi: 10.21690/foge/2017.60.1p.
- Hagolani-Albov, S.E & Halvorson, S.J. (2017). Farm Fresh in the City: Urban Grassroots Food Distribution Networks in Finland. In WinklerPrins A. M. G. A. (Ed.), *Global Urban Agriculture: Convergence of Theory and Practice between North and South*. CABI International.
- Hassanein, N. (2008). Locating Food Democracy: Theoretical and Practical Ingredients, *Journal of Hunger & Environmental Nutrition*, 3(2-3), 286-308.
- Holt-Giménez, E. (2001). Scaling-up sustainable agriculture. Lessons from the Campesino a Campesino movement. *LEISA News* October, 27-29.
- Hou J, Johnson, J.M., & Lawson, L.J. (2009). *Greening Cities, Growing Communities: Learning from Seattle's Urban Community Gardens*. Seattle, WA: University of Washington Press.
- Kloppenborg, J., Hendrickson, J., & Stevenson, G. W. (1996). Coming in to the foodshed, *Agriculture and Human Values*, 13(3), 33-42.
- Lyson, T.A., 2007. Civic agriculture and the North American food system. In Hinrichs, C. et al. (Eds.) *Remaking the North American food system: Strategies for sustainability*, (pp.19-32). University of Nebraska Press.
- Pingali, P.L. (2012). Green Revolution: Impacts, limits, and the path ahead, *Proceedings of the National Academy of Sciences of the United States of America*, 109(31), 12302-12308.
- Pywell R.F. et al. (2015). Wildlife- friendly farming increases crop yield: evidence for ecological intensification. *Proceedings of the Royal Society B* (282), 1-8. <http://rspb.royalsocietypublishing.org/>. [Retrieved on November 16, 2016].

- Renting, H., Schermer, M & Rossi, A. (2012). Building Food Democracy: Exploring Civic Food Networks and Newly Emerging Forms of Food Citizenship, *International Journal of Sociology of Agriculture and Food*, 19(3), 289-307.
- Rosset, P.M. & Martínez-Torres, M.E. (2012). Rural Social Movements and Agroecology: Context, Theory, and Process, *Ecology and Society* 17(3), 17.
- Tornaghi, C. (2014). Critical geography of urban agriculture, *Progress in Human Geography*, 38(4), 551-567.
- van der Ploeg, J.D., & Marsden, T. (2008). Towards a Framework for Understanding Regional Rural Development, In *Unfolding Webs - The Dynamics of Regional Rural Development*, (pp. 3-28). Royal Van Gorcum.
- Wezel, A. et al. (2014). *Agroecological practices supporting the provision of goods and services in agriculture: Examples from France and Europe*. Rome: Food and Agriculture Organization (FAO).
- WinklerPrins, A. M. G. A. & Perpetuo S. S. (2005). Surviving the City: Urban Home Gardens and the Economy of Affection in the Brazilian Amazon, *Journal of Latin American Geography*, 4(1), 107-126.
-

# Creating the “Healing City”: Lessons learned from care farms in three European countries

Magda Rich<sup>1</sup>, Andre Viljoen<sup>2</sup>, Helen Smith<sup>3</sup>

**Keywords:** green care, care farms, urban planning, food systems

## Abstract

A growing interest in de-institutionalised, nature-based therapeutic care in the past two decades has led to the development of a large number of facilities offering green care (a variety of nature-based therapies) to people with a large variety of health and social problems. However, while the percentage of the population living in urban areas is growing, most green care facilities are located in the countryside, limiting access to vulnerable groups who could benefit from these services.

This paper discusses the prospects of establishing an urban alternative of care farms to serve potential urban-based clients. It elaborates on data gained through a detailed online survey targeting care farm practitioners in three European countries (United Kingdom, Netherlands, and Norway). The survey aimed at providing an evidence base on whether it is meaningful to provide green care in urban environments and pinpointing elements of green care practice that can be transferred to an urban setting.

The data revealed that there are major differences between the three countries in the formal establishment of care farms, their legal status, integration within the broader social and healthcare system, and the major client groups they serve. However, therapeutic practices and conditions are very comparable throughout all the countries. In each of the study countries, care farms are generally small-scale facilities with very low numbers of staff members. Therapeutic care is mostly provided as day-care without lodging services and a majority of clients live in the same municipality as where the care farm is located or within a radius of fifty kilometers.

The results of the survey further suggest that while differences exist in the formal establishment of care farms and the client groups they serve, these do not influence service delivery of care provided. Care farms thus represent very flexible therapeutic entities capable of adjusting to location and context. While future research is necessary to investigate the compatibility of care farming within an urban fabric, urban land use, and planning strategies, the survey indicates that incorporating green care into an urban structure could represent a new, socially-focused, element in sustainable urban food systems planning.

## Introduction

Healing effects of nature on human health and well-being have been known to man since the beginning of humankind. However, with the great progress in medical science in modern history, natural remedies have often been replaced by new artificial equipment and medications. While these modern approaches undeniably represent a great step forward in healthcare and improving people's quality of life, research and empirical experience in the last decade suggest that for patients with certain diagnoses, nature-based and de-institutionalized therapies can be a more enjoyable, yet efficient alternative.

These therapies can be compiled together under a general term green care (GC). GC therapies are based on an active interaction of people with nature. They consist of social and therapeutic horticulture, animal assisted interventions, care farming, green exercise, ecotherapy, and wilderness and nature therapy (Hine 2008). Research has shown that these therapies can provide positive benefits especially to people with physical disabilities, learning difficulties, mental health problems, older people, people with dementia, offenders, young people with social problems, and drug and alcohol addicts (Rappe et al. 2008; Sempik 2008; Aldridge and Sempik 2002).

---

<sup>1</sup> Magda Rich (University of Brighton), magda.rich86@gmail.com

<sup>2</sup> Andre Viljoen (University of Brighton), A.Viljoen@brighton.ac.uk

<sup>3</sup> Helen Smith (Nanyang Technological University), h.e.smith@ntu.edu.sg



Existing body of research suggests that most facilities providing green care are located in the countryside. However, the current demographic trend of bustling urbanization has resulted in more than a half of world's population living in urban settings at the moment, with projections of more than 66% of people living in urban areas by 2050 (United Nations 2014). Situation in developed countries is even more urban-focused, with more than 70% of population residing in urban areas in most of developed world (Champion 2001). Given this strong and fast demographic trend, the rural location of green care facilities might possibly represent an obstacle for potential clients who live in a city and are not able to travel, and suggests a potential need to (at least partially) locate provision of these therapies in urban settings.

This paper provides an analysis of a survey conducted in the first half of 2016 which targeted care farms in three European countries. The aim of this survey was to investigate practices of care farms in terms of their formal and financial management, client and staff portfolio, and therapeutic and agricultural practices in order to identify patterns and elements that could be transferred into urban settings.

The results of the survey provide a relatively comprehensive insight into management and daily practices on green care farms. Given the large amount of data obtained from the survey and a following analysis, in this paper, we offer a concise summary of the results and then closely discuss findings that are directly related to the implementation of green care in urban settings.

## **1. Methodology**

### **1.1 Research design**

Existing research on the topic of green care and care farming has been conducted mostly in form of case studies or general overviews of the care farming situation at a national level. The most common research topics related to green care include its health impacts on human health, and green care as part of multifunctional agriculture. So far, no comprehensive study of a large quantity of care farms has been conducted that would investigate and depict their day-to-day practices in a more detailed manner.

In order to bridge this gap, an on-line questionnaire was designed to conduct a survey of care farms in the United Kingdom, Norway, and the Netherlands. The same questionnaire in English language was used in all the three countries. It consisted of 33 basic questions and 14 conditional questions that were or were not asked depending on the answers to previous questions. In order to make the process of as easy for participants as possible, most questions in the survey were multiple-choice and dichotomous (yes-no) questions, complemented with a smaller number of open-ended and constant sum questions.

The survey took place between March-August 2016 when regular batches of e-mails including a cover letter and a link to the on-line questionnaire were sent out every week. Special effort was given to identify and contact individual persons working on green care farms rather than using a generic contact e-mail address. In case individual people were identified, cover letters were personalized accordingly. In addition, a short video was made to introduce the survey and its broader research context as well as a research blog serving the same purpose. Links to the video and the blog were sent as part of the cover letter. In case of no response from a facility, a reminder e-mail was sent two or three weeks later.

### **1.2 Characteristics of the survey participants**

All contact information of the care farms were obtained on the internet. In the UK, the survey targeted care farms that are members of [carefarming.uk](http://carefarming.uk), a network organization promoting care farming and supporting care farmers. In Norway, the survey addressed care farms listed on <http://www.matmerk.no/no/inn-pa-tunet>, a Norwegian alternative of [carefarming.uk](http://carefarming.uk). Contact information for Dutch care farms were obtained on <http://www.zorgboeren.nl>, a website accumulating information on care farming in the Netherlands.

This survey is part of a PhD research project focusing on horticulture-based therapies in urban environments. This survey was designed as a scoping study investigating the general context of green

care. As a result, all types of green care farms were contacted, including those providing only animal-assisted therapies without any horticultural focus.

## 2. Results

### 2.1 Response rates

The survey targeted a total of 150 green care farms in the UK, 310 green care farms in Norway, and 749 care farms in the Netherlands, which sum up to a grand total of 1209 green care farms. There were no mandatory questions in the questionnaire so participants were able to skip any question that they did not wish to answer. It was also possible to submit incomplete questionnaires. As a result, part of the entries that were submitted were partially incomplete.

The highest response rate was achieved in the UK, with 12 full and 17 partial entries, adding up to a total of 29 entries that are equivalent of a response rate of 19.3%. Norwegian response rate reached 6.8% with a total of 21 entries (10 full and 11 partial). Response rate of the Dutch care farms was the lowest one, only 3.6% with a total of 27 entries (13 complete and 14 partial). Total response of the survey thus equals 6.4 %, as shown in Fig.1.

Country	Number of farms contacted	Partial entries	Complete entries	Total (partial + complete)	Total response rate (%)
UK	150	17	12	29	19.3
Norway	310	11	10	21	6.8
Netherlands	749	14	13	27	3.6
Total	1209	42	35	77	6.4

Fig.1 Response rates in each country and in total

### 2.2. General overview of all participating care farms

#### 2.2.1 General information

The most common age of care farms across the countries in our sample, 35 out of 77 care farms (45.55%) was 6-10 years. This coincides with the growing interest of researchers in the topic of green care, which can be tracked back to years around 2006. UK offers an interesting difference from the other two countries, as over a quarter of participating British care farms have existed for more than 20 years.

Care farms in our sample in all the three countries are most frequently located in the countryside (48.28% in the UK, 61.90% in Norway, 48.15% in the Netherlands). It can be explained by the nature of green care which is based on contact with natural environment and previous research, which states that care farms usually originate from existing agricultural farms. Some care farms that are not located in the countryside but in more urbanized environments offer free access to public (not just the clients) as a kind of public park. In our sample, these open care farms form a majority in the UK (61.54%). However, sampled care farms are largely not open for public in Norway and the Netherlands (42.86% and 38.46% respectively).

In a similar way as care farms in our survey are mostly located in the countryside in all the three countries, also their location in relation to their clients appears to be very similar. Most care farms are located either in the same municipality (but further than 15 minutes on foot) as where their clients live (43.32% in the UK; 50.56% in Norway; 50.00% in the Netherlands) or their clients live within 50 km from the farm (38.50% in the UK; 40.00% in Norway; 33.25% in the Netherlands). Considering that in our survey, transportation of clients is most frequently organized by the care farms in Norway and the Netherlands (29.44% in Norway; 40.35% in the Netherlands), and most frequently organized by other organizations in the UK (30.41%), such situation requires a relatively high level of motorized transportation of clients to and from the facilities. An interesting, almost stereotypical, situation is in our Dutch sample where a significant number of clients use bicycles on their way to the care farms.

### 2.2.2 Formal and financial management

Formal and financial management of care farms in our survey varies greatly throughout the three countries. On two hypothetical poles in our survey are the UK and Norway, where British care farms in our sample are most frequently run by charitable (48.28%) and non-profit organizations (31.03%) while individual entrepreneurs and private companies run a vast majority of participating care farms in Norway (57.14% and 38.10% respectively). Sampled Dutch care farms show a variety of both non-profit and commercial management strategies.

These differences may be reflected in other aspects of care farm management. For example, more than 85% of participating care farms in Norway own the land they use for therapeutic purposes. However, the survey showed that only 55.56% of care farms in the Netherlands and 39.29% of care farms in the UK are the land owners. Furthermore, those care farms in our sample that do not own the land they use most frequently lease it for a reduced price (44.44%) or use it for free (33.33%) in the UK, while their Norwegian and Dutch counterparts most frequently lease the land for market prices (66.67% and 50.00% respectively).

An issue showing some of the biggest differences between samples from the three countries is the distribution of different income channels of care farms. Participating British care farms show the highest diversity of income streams, relying heavily on income from non-green care services (15.90% of their income) and public grants in social sector at national (11.65%) and municipal (11.80%) level. Norwegian care farms in the sample generate the greatest part of their revenue from selling products of green care activities (25.00%), supported by public grants in social (15.94%) and healthcare (11.56%) sector, both at municipal level. However, in the sample from the Netherlands, care farms rely on public funds to the greatest extent by far, both at local and national level (public funds in healthcare at national level reach 26.20% and municipal level 15.50%; public funds in social care sector at national level add 16.40% and 23.00% at municipal level).

Interestingly, while most care farms in our sample claim to receive no support from the local municipality (62.07% in the UK, 71.43% in Norway and 62.96% in the Netherlands), public funds at municipal level form a substantial part of the overall income of care farms. Figure 2 shows breakdown of revenue streams of our sampled care farms. Apparently, public funds in social care and healthcare sector at municipal level represent important sources of income in particular.

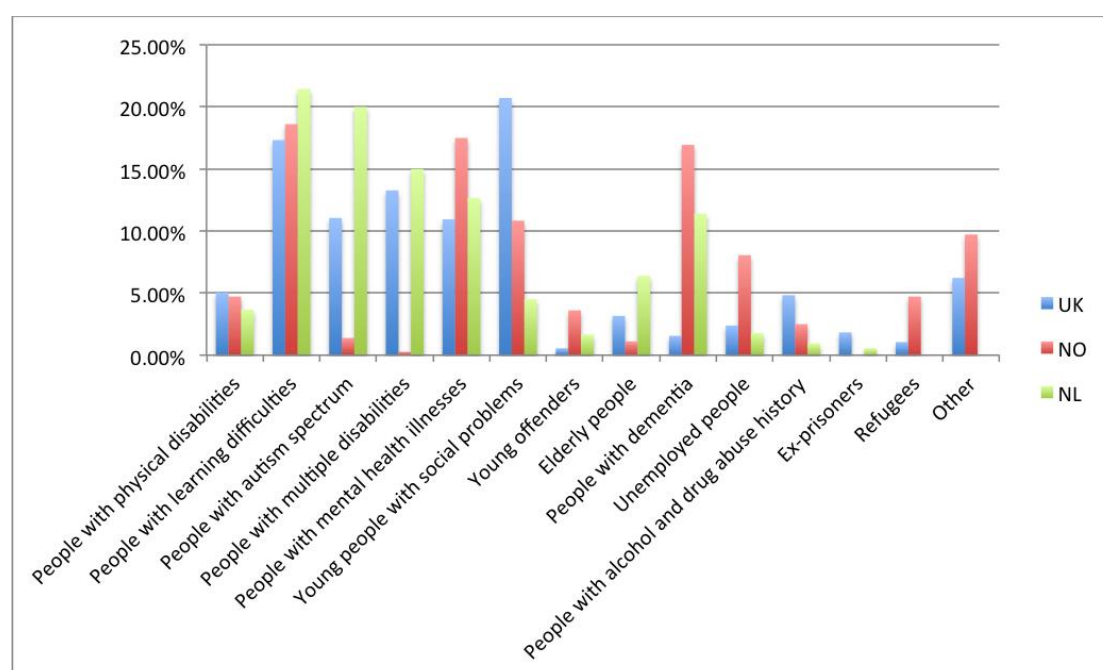
Income sources	UK (%)	Norway (%)	Netherlands (%)
Public funds and grants in social care sector - national level	11.65	8.44	16.40
<b>Public funds and grants in social care sector - municipal level</b>	<b>11.80</b>	<b>15.94</b>	<b>23.00</b>
Public funds and grants in healthcare sector - national level	0.50	0.00	26.20
<b>Public funds and grants in healthcare sector - municipal level</b>	<b>2.50</b>	<b>11.56</b>	<b>15.50</b>
Public funds and grants in agricultural sector - national level	4.50	9.38	4.00
Public funds and grants in agricultural sector - municipal level	0.00	0.00	0.50
Public funds and grants in education sector - national level	2.15	1.88	0.40
Public funds and grants in education sector - municipal level	6.75	5.31	0.00
NGOs and charities on a municipal level	9.45	0.00	0.00

NGOs and charities on a national level	8.75	0.00	0.00
Voluntary donations	4.25	0.00	0.50
Clients' private financial resources (for green care)	7.45	1.25	0.60
Income from selling products of green care activities	2.65	25.00	8.25
Income from selling products of non-green care activities	6.25	9.69	3.60
Income from non-green care services	15.90	4.06	0.20
Other	5.45	7.50	0.85

*Fig 2 Distribution of income channels in each country*

### 2.2.3 Therapeutic practices

Care farms in all the three countries in our sample serve a large variety of clients. However, if we look at actual amount of people from different client groups, there are certain groups that are more numerous than others in each country. The most numerous client group in our survey in the UK are young people with social problems (20.72%), and people with learning difficulties are the largest group both in Norway (18.61%) and the Netherlands (21.44%). Figure 3 shows the distribution of client groups in all the countries in the survey.



*Fig 3 Distribution of clients in each country*

When we add up client groups in all the three countries, the three most numerous client groups are people with learning difficulties (19.13%), people with mental health illnesses (13.70%), and young people with social problems (12.02%). Figure 4 shows a total distribution of clients in the survey.

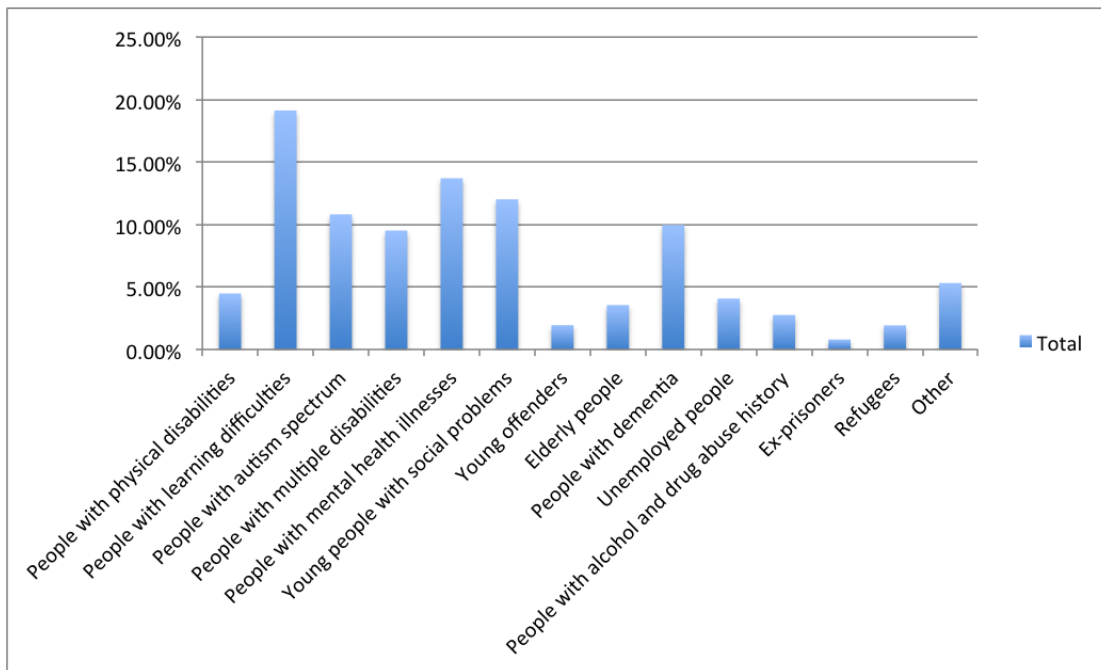


Fig 3 Total distribution of clients

An important care-related issue is the staff capacity needed to run such a facility. As the amounts of people who are served at each facility differ greatly, client/staff ratio offers a better insight into this issue. In the questionnaire, we asked about usual number of clients using the facility on a given day, and similarly, how many staff members are usually present. When we combine these two pieces of data, we can easily calculate how many clients fall on one staff member. Comparing this ratio between the three countries in question brings both great similarities and differences. In the UK and Norway, the most common client/staff ratio in our sample is 1-1.99/1 (33.3% and 29.41% respectively), while in the Netherlands, this is the least common ratio (if we eliminate those with a zero frequency), present only at 4.76% (or 1 out of 21) care farms in our sample. The most common client/staff ration on Dutch care farms in our survey is 4-4.99/1 (28.57%).

Interestingly, the sample of British care farms in our survey contains a number of facilities with rather 'extreme' client/staff ratios. A considerable amount of 23.81% (or 5 out of 21) of the sampled care farms in the UK operate with the ratio of less than 1/1, i.e. there are more staff members than clients. On the contrary, 9.52% (or 2 out of 21) of the British care farms in our survey operate with the ratio over 20/1. No care farms from Norway or the Netherlands in our survey show such values. Figure 4 provides an overview of the client/staff ratio at care farms in all the countries in our sample.

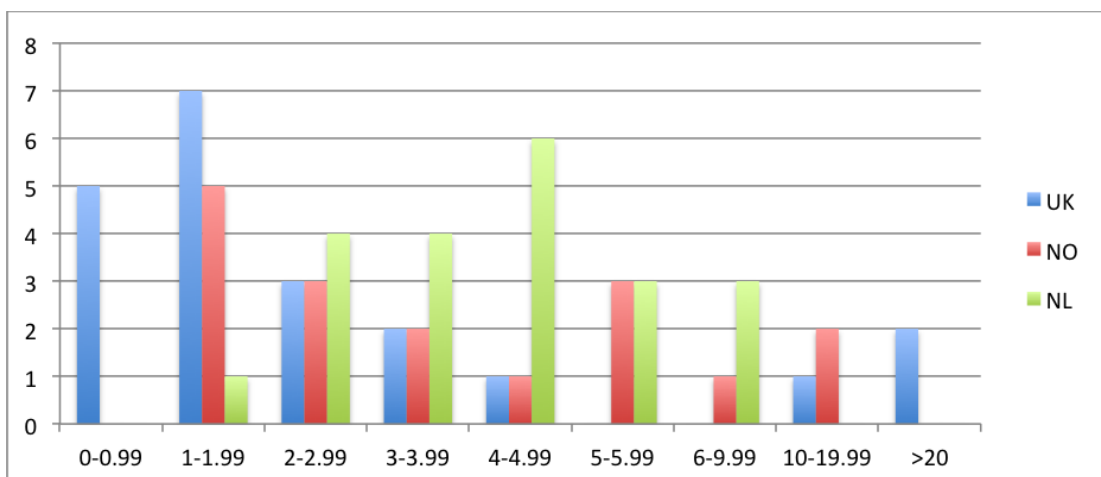
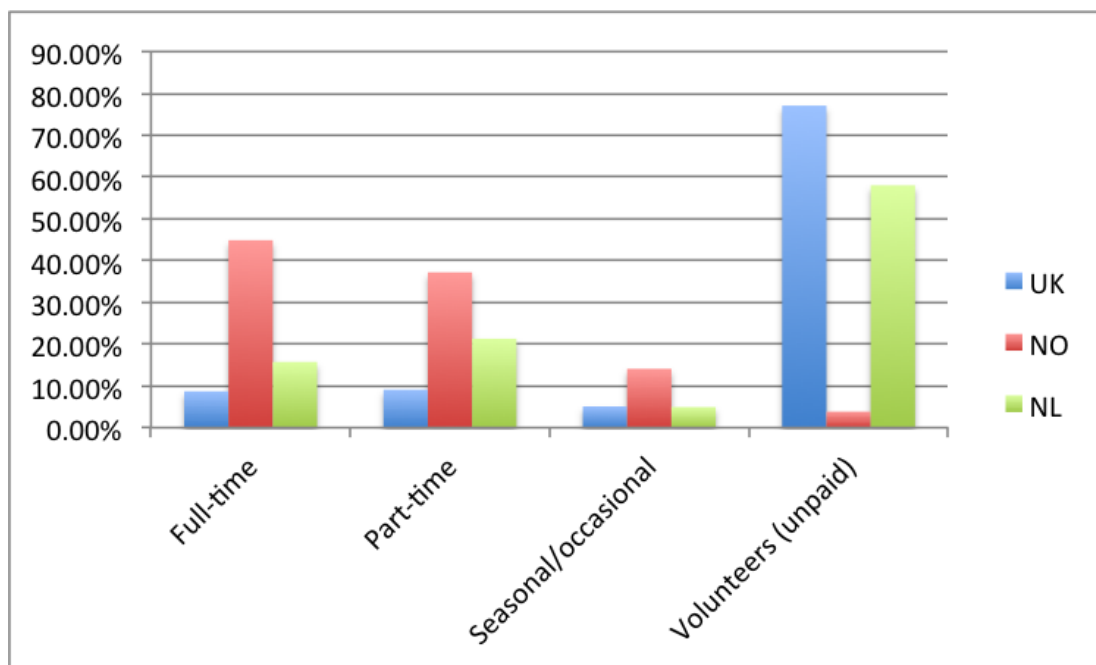


Fig 4 Overview of client/staff ratio in each country

The survey also provided an interesting insight into employment in green care. While sampled British care farms rely heavily on unpaid volunteers, with 77.10% of people working on care farms, this percentage is considerably lower in the Netherlands (58.02%) and almost negligible in Norway (3.85%). Norwegian care farms participating in our survey show the highest percentage of full-time and part-time employees (44.87% and 37.18% respectively), followed by care farms in our Dutch sample (15.74% full-time and 21.30% part-time employees). Sampled British care farms have the lowest numbers of full-time and part-time employees (8.71% and 9.10% respectively) of the three countries. Figure 5 shows the distribution of the employee appointments on care farms in our survey.

The most common mode of care provided on the care farms in our survey is day-care without overnight lodging (88.05%). In all the three countries, the most common ways of carrying out therapeutic activities on sampled care farms are in small groups (84.81%) or individually (81.77%). However, on a substantial part of care farms tasks are also done in a whole group (57.98%). This finding is potentially useful for detailed planning and design of areas for green care in a city, enabling diverse amounts of people work on the site.



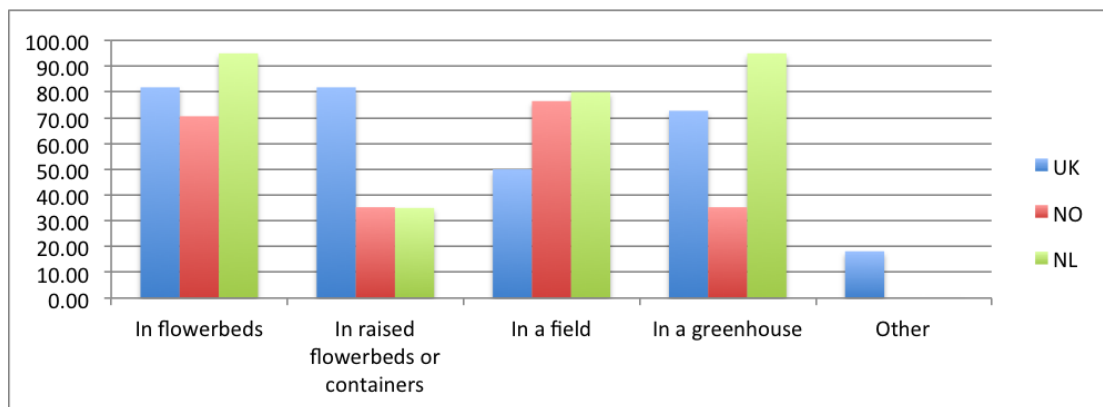
*Fig 5 Distribution of different employee appointments on care farms*

#### **2.2.4 Horticultural practices**

Given the existing research on this topic, it is no surprise that when we sum up data from the survey on plants that are grown on care farms, vegetables feature as the most frequent ones (90.91% in the UK, 82.35% in Norway, 95% in the Netherlands). However, while we could assume that second most common plants would be another edible plants, such as fruits or herbs, in reality these are flowers (95.45% in the UK, 52.94% in Norway, 90% in the Netherlands). In general, the most common plants grown at care farms in our survey are (in descending order): vegetables, flowers, fruits, fruit trees, and herbs and spices.

There are several differences between the three countries in our survey in the ways plants are grown on care farms. In the UK, flowerbeds, raised flowerbeds or containers and greenhouses are the three major ways. However, on sampled Norwegian care farms, plants are grown mostly in flowerbeds and fields, while on sampled Dutch care farms in flowerbeds, fields, and greenhouses. Figure 6 shows the frequency of different ways plants are grown in the three countries in our survey. On sampled care farms in the UK and Norway, in a majority of cases (77.27% and 82.35% respectively) plants receive additional care that is

not part of green care activities. The situation in the Netherlands is reversed as plants receive additional care only on 40% of sampled care farms.



*Fig 6 Overview of planting modes in the three countries in our survey*

### 3. Discussion

#### 3.1 Location

Our survey results confirm the hypothesis that green care farms are mostly located in the countryside. Since green care therapies are based on contact with nature, this finding comes as no surprise as natural conditions are undeniably better in the countryside than in urban areas. According to the survey, the greatest portion of care farm clients live in the same municipality as where the care farm is located. This suggests that clients tend to use local care farms that are easy to access. This finding support the hypothesis that urban-based people have restricted access to nature-based therapies.

Moreover, a considerable amount of clients using care farms in our survey live within 50 km from the facilities. In this case we can assume that people travel to care farms because there is not a suitable care farm in their close vicinity. We do not have any data where exactly care farm clients live. Still, given that a majority of care farms located in the countryside, we can guess that a considerable part of people travelling for green care are urban residents. Thus, creating conditions for suitable green care therapies closer to their homes, i.e. in urban areas, might make green care more accessible.

This argument is also supported by the fact that, by far, the most common mode of therapeutic services on our sampled care farms is day-care without overnight stays. In this way, clients travel to and back from care farms on the same day so close proximity of a suitable facility would mean a significant advantage.

#### 3.2 Formal and financial management

Formal and financial management of our sampled care farms show interesting systematic differences between the three countries. As mentioned earlier, UK and Norway stand on the opposite poles in terms of commercialization of care farming. It seems, indeed, that while care farming is driven more by good will at a non-profit level in the UK, it is mostly, in our sample almost exceptionally, conducted as for-profit business in Norway. Sampled care farms in the Netherlands stand somewhere in between with a mixed set of the form of their management. If we look at these findings and combine them with some other management data from the survey, we can see some possible relations.

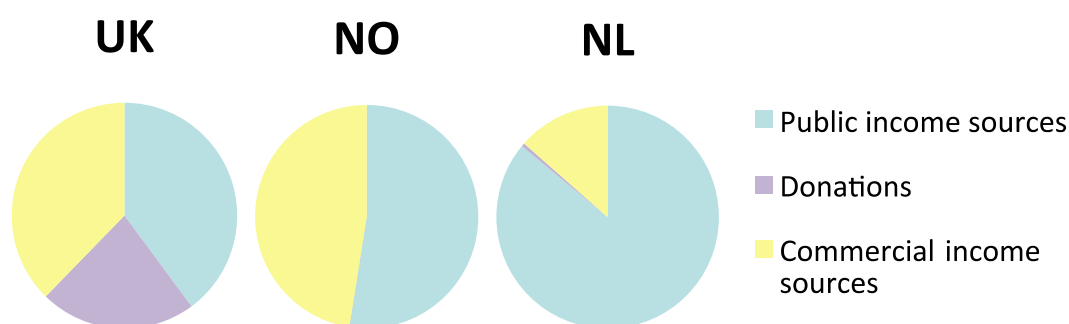
While in the UK, only a minority of sampled care farms own the land their use for therapeutic purposes, it is a vast majority in Norway and a slight majority in the Netherlands. Moreover, those sampled care farms which do not own the land pay market price level rent only in less than 25% of cases in the UK, but in two thirds of cases in Norway, and a half of cases in the Netherlands. A question arises whether the farms which do not own their land and either get it for free or pay a rent that this below the market level would be able to exist and sustain themselves if the situation changes and they would have to pay a full market price instead. Apparently, losing access to land results in inability to provide green care so being

vitality dependent on paying no or significantly reduced rent puts such care farm into a very vulnerable position. Figure 7 shows a summary of the management types and land tenure in all the sampled countries.

	UK	NO	NL
Public + Non-profit management / For-profit management (%)	82.76 / 17.24	4.76 / 95.24	37.04 / 62.96
Care farms own the land (%)	39.29	85	55.56
Care farms renting land for market prices (%)	22.22	66.67	50.00

*Fig 7 Summary of management types and land tenure*

Financial vulnerability is also related to the integration of care farms and care farming in the broader system and context of a given country. Care farms in our Dutch sample claim to receive largest portions of their income from public funds, which suggests that they have a relatively strong recognition in the formal system of the country. By contrast, income sources in our British sample seem to be much more fragmented. Such situation suggests that the level of recognition of care farming by the formal system in the UK is lower, as care farms cannot rely on public funding and have to find or create other ways to ‘subsidize’ provision of therapeutic services. Norwegian care farms in our sample seem to use the most balanced ratio of public and commercial income sources, 52.5%/47.5%. Interestingly, while British care farms in our sample receive over 22% of their income from diverse donation-based channels, income from these sources is negligible (0.50%) in our Dutch sample and zero in our Norwegian sample. Figure 8 provides an overview of public, donation-based and commercial income sources on care farms in our survey.



*Fig 8 Overview of public, donation-based and commercial income sources*

### 3.3 Clients and therapeutic environment

The great diversity of clients using services of care farms in our sample proves that green care is suitable for people with a very diverse range of medical and social problems. As the largest groups of clients using care farms in our sample differ in each country, we can assume that it responds to the particular needs in each country. The survey did not reveal any significant differences in farm and horticultural management depending on the client groups the farms cater for so it is relatively safe to assume that such differences are determined more by physical conditions of each place such a climate or soil. From our previous research, we know that some specific conditions exist that need to be created for certain client groups, such as precise labeling of tools for people with autism spectrum. However, these adjustments are fairly minute and easily executable in the scope of the whole farm management.



To sum up, the survey results support the existing research, which claims that green care therapies are suitable for a large number of diverse medical and social conditions. In addition, we can assume that therapeutic practices provided on care farms can be relatively easily tailor-made for clients according to their needs. On a scale of a city, green care therapies could potentially respond to the needs of both individual clients and facilities or institutions providing care for people with certain diagnoses.

### **3.4 Client and staff capacity**

The client/staff ratio results from our survey provide an interesting insight into green care management. Both in our British and Norwegian samples, the most common ratio is very low, 1-1.99. At the same time, while sampled British care farms rely heavily on unpaid volunteers, sampled Norwegian care farms manage to provide such low ratio almost exclusively with paid staff members. This is a very important finding which suggests that care farms can generate sufficient income so that they do not have to be dependent on potentially fluctuating supply of unpaid volunteers.

### **3.5 Therapeutic and horticultural practices, farm management**

Our findings regarding the therapeutic practices, physical therapeutic conditions and daily routine are largely in favor of implementing green care in urban areas. Sampled care farms are mostly small-scale facilities with core amenities that are feasible to provide in an urban environment where available space is limited. The ways plants are grown on sample care farms differ greatly and respond to physical conditions of the farms in question. In a similar manner, optimal ways of planting can be developed in urban areas, reflecting given conditions of the available spaces, climate, as well as specific needs of their potential clients.

Moreover, on-site composting seems to be common practice on care farms. When executed correctly, composting on urban care farms or in therapeutic gardens could become a far-reaching component of an urban waste management system, using not only their own biological waste but processing waste of other businesses. For example, the Cultivate urban farm project in Christchurch, New Zealand, uses biological waste from cafes and restaurants for composting and fertilizing.

## **4. Conclusion**

Our survey provides an interesting insight into some of the practicalities of running a care farm and providing green care therapies. While the formal management of care farms differ greatly, the therapeutic and farm management show significantly fewer differences, which mostly result from the physical conditions of each care farm.

While the findings of our survey support the idea of creating places for green care provision in urban settings and provide an outline of managing such facilities, they do not provide a general cookbook for an urban implementation of green care. As one of the most important pieces of knowledge arising from this survey is that green care is very flexible in its adoption in diverse settings and for different sets of clients, every location needs to be assessed individually in order to ensure the success of such endeavor.

## References

- Aldridge, Jo; Sempik, Joe. 2002. Social and therapeutic horticulture: evidence and messages from research. <https://dspace.lboro.ac.uk/2134/2928> retrieved on 5th June 2014
- Bragg, R., Egginton-Metters, I., Elsey, H., & Wood, C. (2014). Care farming: defining the 'offer' in England. *Natural England Commissioned Reports, NECR*, 155.
- Champion, T. (2001). Urbanization, suburbanization, counterurbanization and reurbanization. *Handbook of urban studies*, 160, 1.
- Hassink, J., Hulsink, W., & Grin, J. (2012). Care Farms in the Netherlands: An Underexplored Example of Multifunctional Agriculture—Toward an Empirically Grounded, Organization-Theory-Based Typology. *Rural Sociology*, 77(4), 569-600.
- Van den Berg, A. E., Hartig, T., & Staats, H. (2007). Preference for nature in urbanized societies: Stress, restoration, and the pursuit of sustainability. *Journal of social issues*, 63(1), 79-96.
- Haugan, L., Nyland, R., Fjeldavi, E., Meistad, T., & Braastad, B. O. (2006). Green care in Norway. *Farms as a resource for the educational, health and social sector. Farming for Health. Green-Care Farming Across Europe and the United States of America*. J. Hassink and M. van Dijk. Dordrecht, Wageningen UR Frontis Series, Springer, 13, 109-126.
- Hine, Rachel; Peacock, Jo; Pretty, Jules N.. 2008. Care farming in the UK: Evidence and Opportunities. Report for the National Care Farming Initiative (UK). University of Essex.
- Rappe, Erja; Koivunen, Taina; Korpela, Elli. 2008. Group gardening in mental outpatient care. In: Therapeutic communities. 29. p. 273.
- Sempik, Joe. 2008. Green care: A natural resource for therapeutic communities. In: Therapeutic communities. 29.3. p. 221-227.
- United Nations (2014). World Urbanization Prospects: The 2014 Revision, Highlights. Department of Economic and Social Affairs. *Population Division, United Nations*.
- Viljoen, A., & Howe, J. (Eds.). (2012). *Continuous productive urban landscapes*. Routledge.
-

## Individuals cultivating edible plants on buildings in England

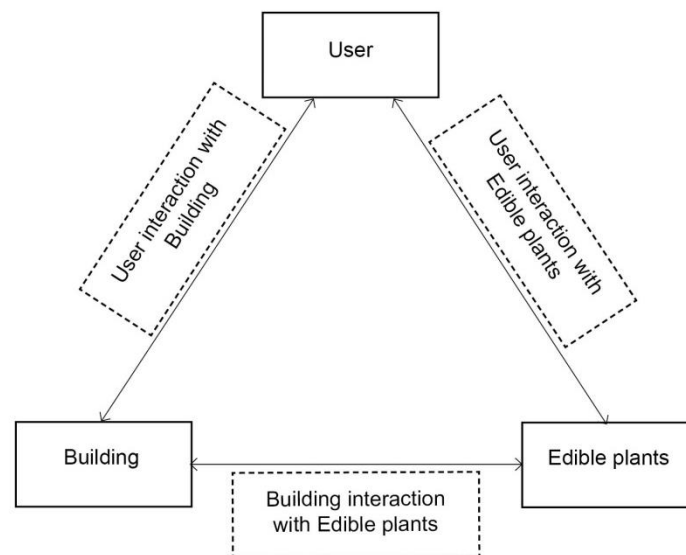
Mina Samangooei

Oxford Brookes University, Oxford, UK

Email minasaman@gmail.com

Food production, particularly local production, is a key component of sustainable urban environments, given the resilience of the supply and disposal of food are major concerns in cities worldwide. Existing research suggests there are key environmental problems in the built environment; air and noise pollution, the urban heat island effect, drainage of storm water, lack of habitat space for flora and fauna, competition for land due to population growth, reliance on fossil fuels to function, and access to food. These environmental problems have negative effects on mental and physical health and disconnect people from food production. Along with these benefits, if the vegetation is edible it alleviates the negative impacts of globalisation and urbanisation, food security, food poverty, food waste and the water footprint of food. It also contributes to resource efficient and waste minimising consumerism through directly reconnecting people with food growing, education, health through increased nutrition and exercise and increasing community cohesion. Integrating vegetation directly with buildings (i.e. on the building fabric or inside a building) can contribute to the energy efficiency of a building, protects the external fabric and reduces noise pollution. Integrating edible vegetation directly with buildings lessens competition for land for local food production, provides a short distance to growing spaces and contributes to reconnecting city dwellers with food production by increasing the visibility and proximity of food production. Due to there being little land in dense urban areas suitable for the integration of green infrastructure or food production, it is important to look at how to integrate plants on buildings. This can include plants on walls, rooftops, balconies, windowsills and inside buildings.

When cultivating edible plants at ground level, the main elements that shape success of the undertaking are the edible plants, qualities of the ground and the person cultivating the plants (the user). Similarly, three distinct elements are involved when integrating edible plants with buildings (edible plants, users (the individuals growing and eating the produce) and buildings). These are shown in the conceptual framework below (Figure 1).



**Figure 1: Conceptual framework showing the three elements for cultivating edible plants on buildings**

A review of the literature indicated there is a lack of understanding of the user parameters in relation to the edible plant and building parameters. This synthesis indicates that there is little empirical data about the people who use these systems and their relationship with the systems. With this in mind a central aim in this study is to fill this gap in knowledge with a focus on investigating the parameters that affect why people may, or may not, cultivate edible plants on buildings (grow food on and within buildings) using an approach underpinned by behaviour theory. Cultivating edible plants on buildings can be seen

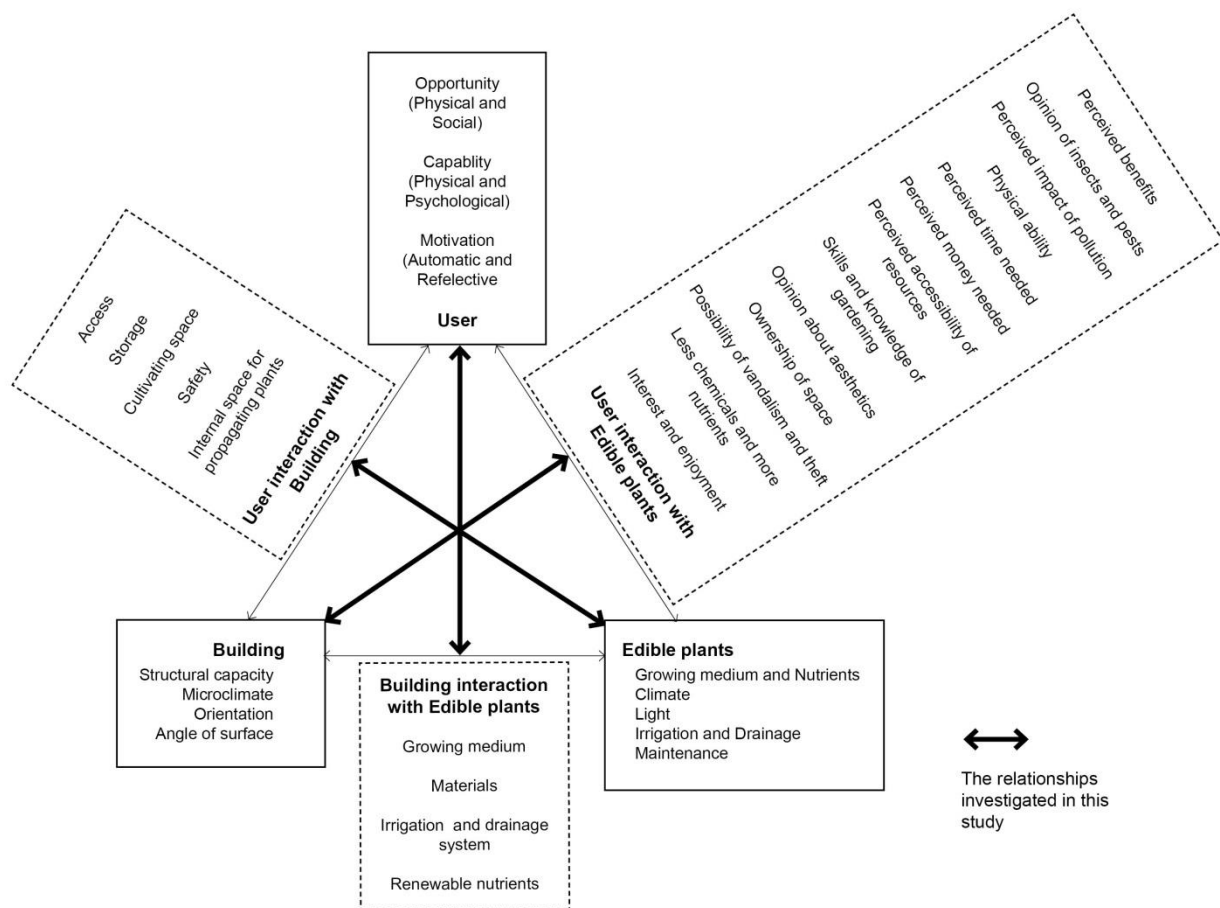
as a “behaviour” – an action or actions that someone can undertake and the “parameters” – are the things that may motivate or be a barrier to the motivation of the behaviour. This work attempts to fill this gap in understanding, examining a primary research question: “What affects individuals to cultivate edible plants on buildings in England?”

The relationships that need further investigation are shown in the conceptual framework (Figure 2). The interactions between these three elements were investigated: buildings’ interactions with edible plants, users’ interaction with a building and users’ interaction with the edible plants. The conceptual framework shows in bold arrows the relationships that need further investigation; namely, the user parameters affecting the interaction of edible plants with buildings, the building parameters affecting the user interacting with edible plants and the edible plant parameters affecting the user interacting with a building. These relationships are not as critical for the success of inedible plants integrated with buildings as there is less user involvement with these systems (e.g. a green roof with inedible plants does not need to be easily accessible and can be left to grow with minimal maintenance). The user needs to interact with the edible system, where the Behaviour Change Wheel, from research in behavioural psychology, showed that the user needs to be motivated, capable and have the opportunity to undertake the behaviour of using the system (maintaining, harvesting, and eating).

The conceptual framework also shows the parameters that affect these relationships, which were formed from findings in the literature. These user parameters require further investigation, as they are from a literature that focused on cultivating edible plants at ground level rather than on buildings. There is a lack of knowledge of the parameters that affect the behaviour to cultivate edible plants on buildings.

The research findings can provide a better understanding of the parameters related to users of systems for cultivating edible plants on buildings. A better understanding of the parameters that affect people to cultivate edible plants on building can underpin further developments and guide the design of systems for cultivating edible plants on buildings. For example, such an understanding can inform the development of an assessment tool to evaluate the potential for cultivating edible plants on existing buildings, similar to assessing the energy performance of a building. The findings of this research could provide a framework for assessing the occupant of a building (user parameters), in addition to assessing the building and edible plant parameters. Ultimately, this knowledge would serve to increase the chance of a system’s success in practice.

This research utilizes a two-phase sequential mixed method. In phase 1, a questionnaire was formed to test hypotheses based on the Behaviour Change Wheel (BCW), behaviour theory. The indicators in Figure 2 underpin the research methodology. Single variables were assessed in relation to the main research question. Bivariate analysis was undertaken to find relationships between pairs of variables. Strong correlations were found between 276 pairs of variables that were relevant to the main research question. These correlations were split into four key categories (Physical, Personal Psychology, Personal Knowledge and Community). These results indicated the importance of parameters related to; physical elements (such as space, access and physical ability), the personal thoughts of individuals about the behaviour, the knowledge of individuals about the behaviour and how the individuals’ community might affect them undertaking the behaviour. Four open questions were formed related to the four key areas in order to investigate them further using semi-structured interviews (Phase 2).



**Figure 2: Conceptual framework showing the three main elements for cultivating edible plants on buildings and their relationships, as well as the parameters that guided the research methodology**

In phase 2, semi-structured interviews were undertaken in order to further explore the findings of phase 1. 30 interviews were undertaken of interviewees from England who have varying levels of experience of cultivating edible plants and/or cultivating edible plants on buildings. Content and thematic analyses were undertaken of the interview transcripts, which highlighted parameters that affect the behaviour to cultivate edible plants on buildings, split into two locations of cultivation on buildings and urban environments in general. The parameters in each location were split into key categories including: physical parameters, personal psychological parameters, knowledge parameters, community parameters and economic parameters. The content and thematic analyses were underpinned by the main research question. 41 parameters that affect the behaviour to cultivate edible plants on buildings were found. The parameters have been added to the theoretical framework diagram (Figure 3) below. The parameters in *italics* are the ones that have been added to the diagram after the data analysis in order to show the parameters that have been uncovered by this research study. The parameters in **bold** were the ones talked about by 20 or more interview participants, in order to give an indication of how the parameters can be prioritised. The parameter “Sharing tasks with others” from the literature review has been split into “Share ideas, inspire, reassurance” (UC2) and “Help and support from others” (UC3) due to the primary research in phase 2 showing these as two distinct areas of “sharing tasks with others”.

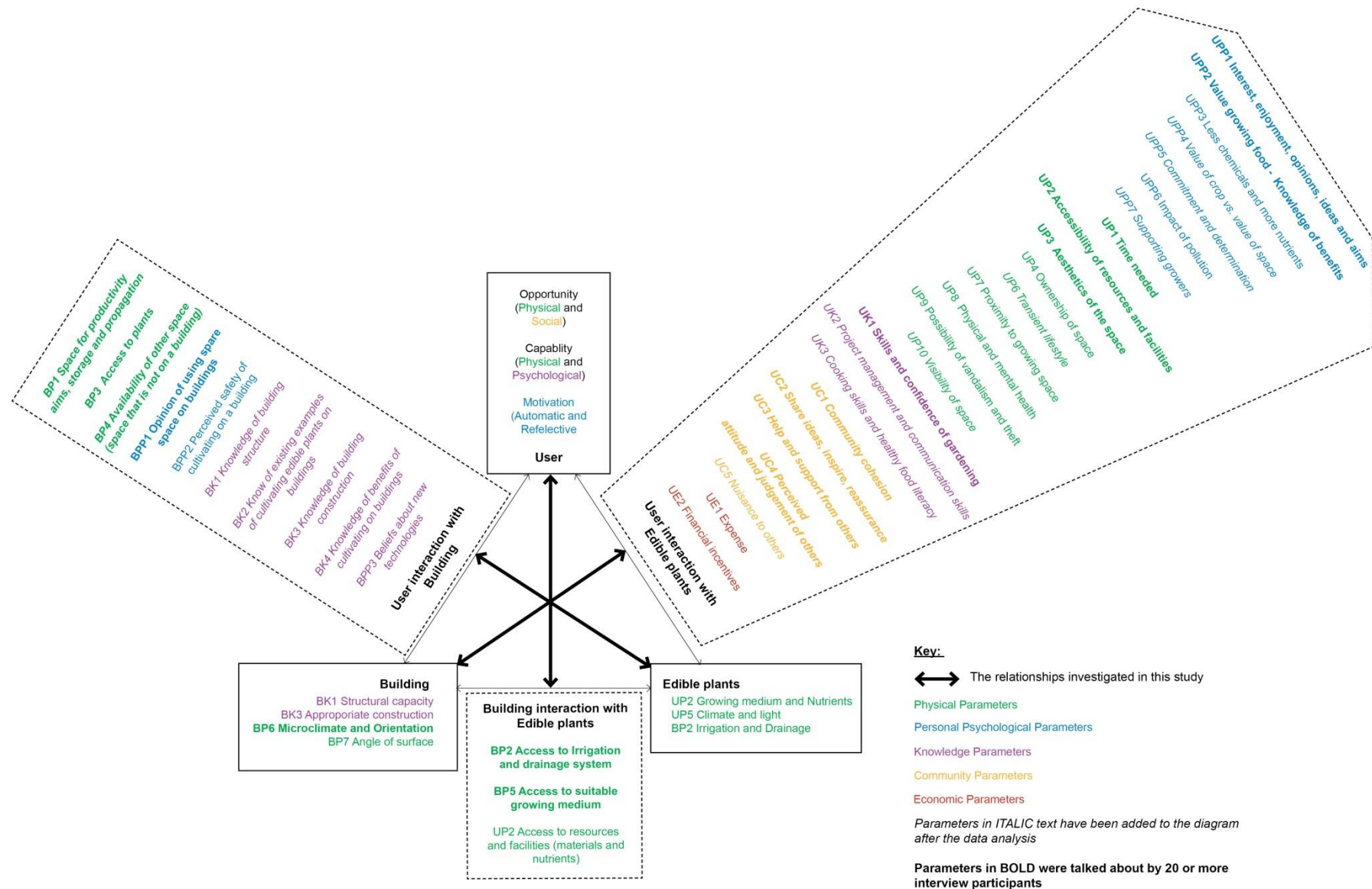
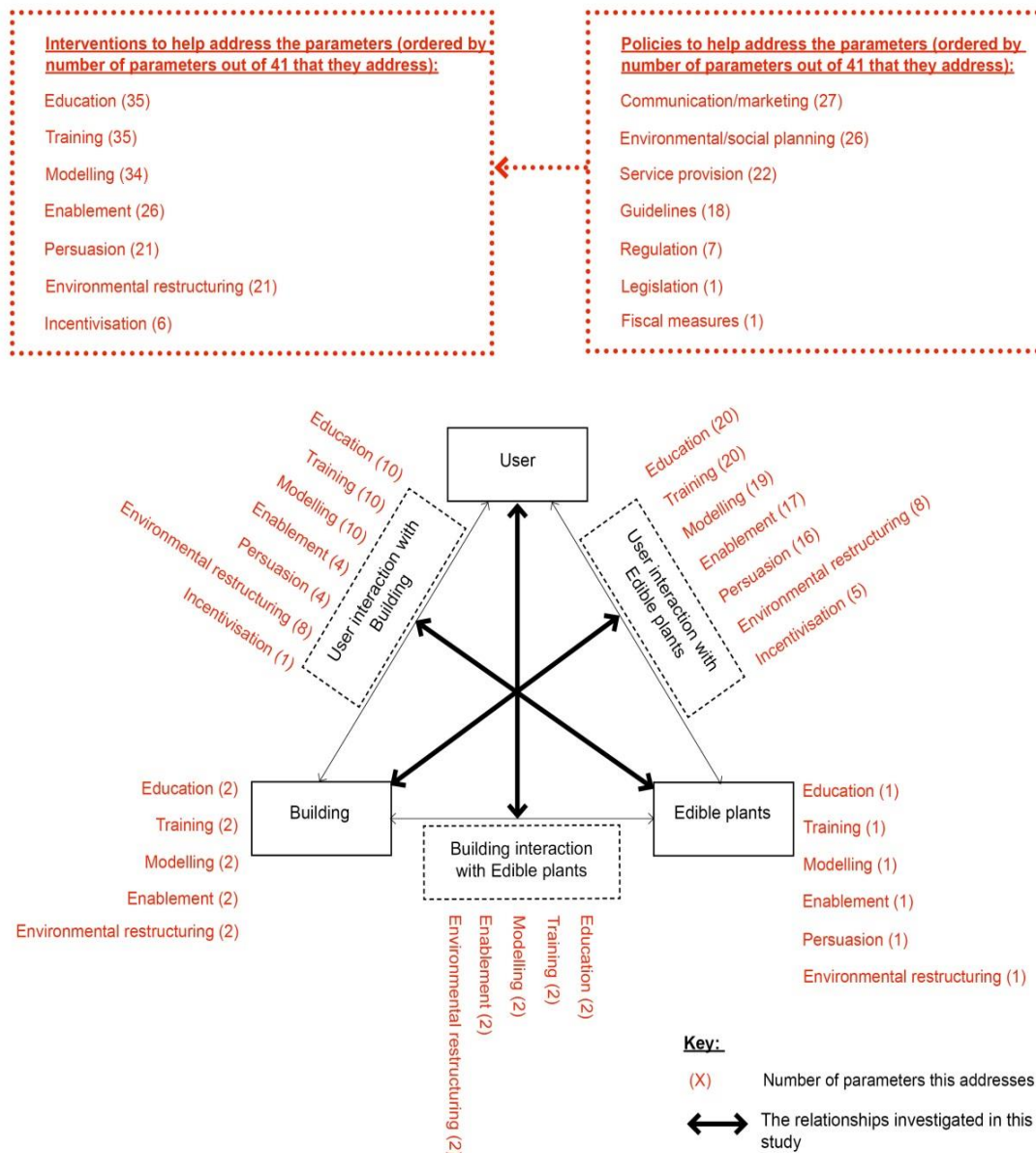


Figure 3. Theoretical framework showing the parameters that affect the behaviour to cultivate edible plants on buildings

The parameters that affect the behaviour to cultivate edible plants on buildings were related back to the behaviour theory in order to test the theory further. A discussion was undertaken of the parameters in relation to two behaviour theories (the Theory of Planned Behaviour and the Behaviour Change Wheel). This was undertaken by: 1. Evaluating the links between the parameters and the two theories to show how the parameters are supported by the theory and how the theory is further supported by the findings of this research and 2. Find the relevant interventions and policies from the Behaviour Change Wheel that could help address each parameter.

The links between the parameters and the behaviour theory suggest that the parameters that affect the behaviour to cultivate edible plants on buildings may rely on a combination of physical and psychological conditions that lay both within the person and are external to the person. A combination of both is required in order for a person to cultivate edible plants on buildings. Further, the assessment of the two behaviour theories also reinforced the idea that the Behaviour Change Wheel has more utility in the present work compared with the Theory of Planned Behaviour. It is argued that this is mainly because this theory does not look at Automatic motivations such as desires, emotional responses, habits and reactive psychological states.

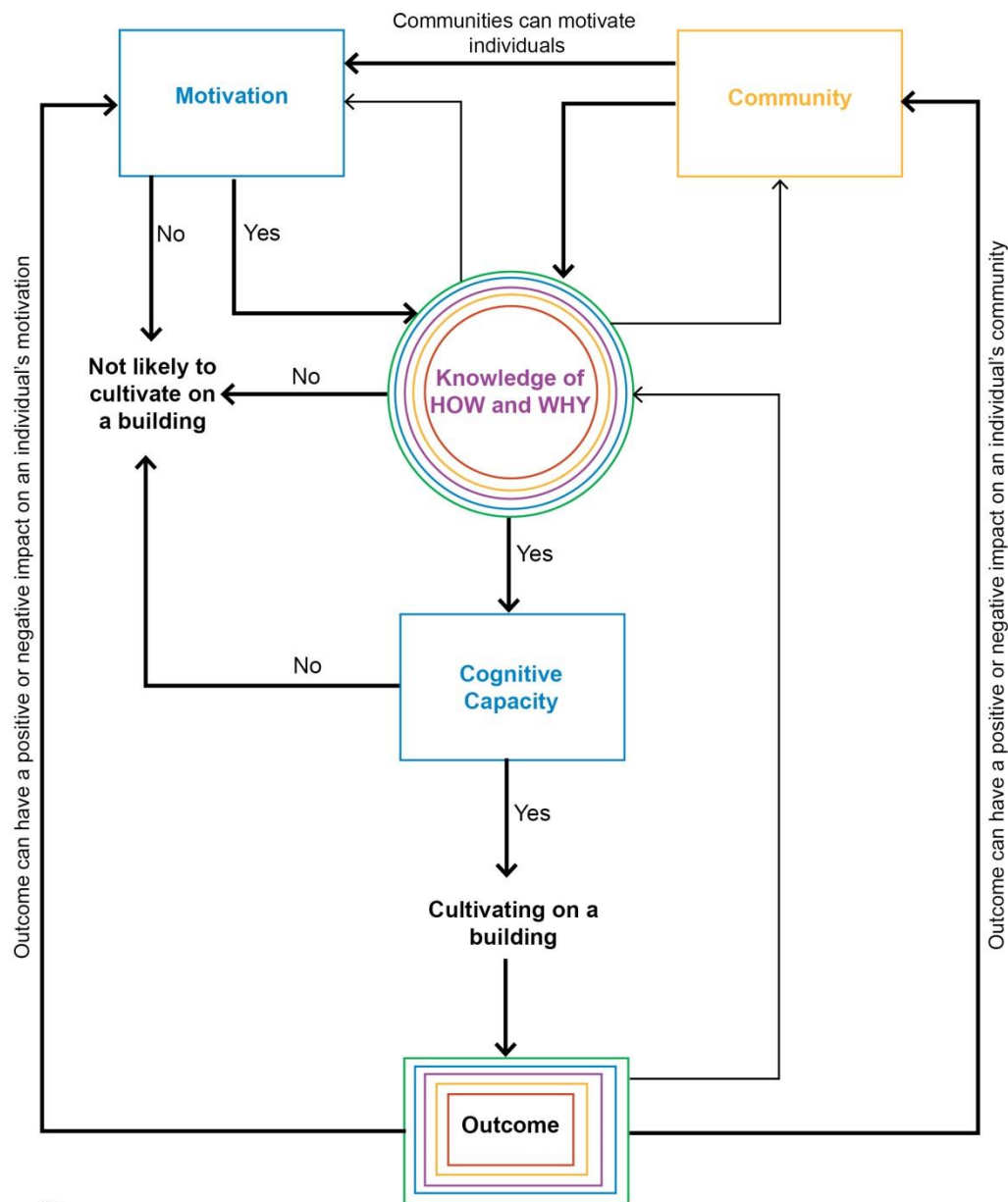
The research also linked the interventions and policies from the Behaviour Change Wheel with respect to the parameters under study. Figure 4 below provides a visual representation of this assessment. It presents an adapted version of the theoretical framework diagram (Figure 3) that illustrates the interventions and policies that can help address and understand cultivation behaviour. Figure 4 shows the number of parameters that can be addressed by each intervention and policy under each branch in Figure 3. It was found that education, training and modelling interventions are important, so significant interventions to explore when implementing cultivation of edible plants on buildings. This further underpins the discussions of each parameter regarding how they could be addressed where knowledge was a frequent solution, for example related to cultivation skills, education of the benefits of cultivating edible plants on buildings and knowing existing examples. There are other interventions that are also helpful, so each parameter should be looked at individually. Although any given situation can be taken as unique, these findings suggest an understanding can be developed of the people who will be using the space, in order to assess the parameter's barriers for them and the interventions that can be used to address these parameters. This provides a tentative approach to this end. As such it looks at how the parameters that affect individuals to cultivate edible plants on buildings can be addressed. Further research on how these parameters can be addressed is required, bringing together ideas from other relevant theories.



**Figure 4: The intervention functions and policy categories within the theoretical framework**



Figure 5 summarizes the significant findings of this research, and discusses their relationships with one another and the parameter categories. Figure 5 brings together the parameters in Figure 4 in the form of categories. The diagram provides a visual link between the parameter categories, showing how they related to each other in relation to someone undertaking the behaviour of cultivating edible plants on buildings. For example, Figure 5 shows that a level of knowledge is required in order for an individual to be able to cultivate edible plants on buildings, where motivation alone is not sufficient for individuals to undertake the behaviour. It also represents the underlying importance of cognitive capacity explained further below.



**Key:**

Physical Parameters

Personal Psychological Parameters

Knowledge Parameters

Community Parameters

Economic Parameters

**Figure 5: A summary of the parameters that affect individuals to cultivate edible plants on buildings**

The parameters within the theoretical framework indicate that the following are important influences on the behaviour to cultivate edible plants on buildings. These are listed in order of importance and discussed further below.

1.A person's cognitive capacity available to implement and maintain the system.

This is the most important as without the available cognitive capacity, someone with high motivation and knowledge of cultivating edible plants on buildings, would still not be able to undertake the behaviour.

A person may know HOW and WHY to cultivate edible plants on buildings and be motivated to do it, but they may not have the cognitive capacity or mental energy (Lieberman, 2013) available to think about undertaking the behaviour. Such mental energy could be otherwise utilised by a number of other demands: due to individuals' thoughts being occupied with something else. For example occupied by work, which is linked with time (UP1) (amount of time free for other thoughts apart from work), due to sleep deprivation or poor mental health (linked with mental and physical health, UP8). The level of commitment and determination (UPP5) of an individual may be able to help to some degree to overcome a lack of cognitive capacity; If an individual is committed to undertake the behaviour, they will try hard to make it happen (Guengerich, 2013). Sharing ideas, inspiring others and giving reassurance (UC2) and help and support from others (UC3) can also help people who do not have the cognitive capacity available to cultivate edible plants on buildings.

2.A person's knowledge of the how and why to cultivate edible plants on buildings.

The results in this research show that knowledge regarding how to cultivate edible plants on buildings and knowledge of why to cultivate edible plants on buildings are key to encouraging individuals to cultivate edible plants on buildings. Table 1 below shows how all 41 parameters could be addressed by knowledge of HOW and WHY.

3.A person's motivation to cultivate edible plants on a building.

If a person has a strong desire to cultivate edible plants on a building they will try to work out how to do it. Knowledge of how and why to cultivate edible plants on buildings can help foster motivation, but someone can be motivated without this knowledge. Knowledge of HOW and WHY to cultivate edible plants on buildings is not easily available to 'normal' people who do not have the motivation to look for the knowledge.

4.The experience of outcomes obtained from undertaking the behaviour.

In order for a person to continue cultivating edible plants on buildings, they need to be pleased with the outcome. The outcome could be the edible plants that they produced, as well as the enjoyment that they had, knowledge gained, aesthetics enjoyed etc. and the physical outcome of exercise that they gained. Outcome leads to continued motivation (Figure 5).

5.A person's community.

The community of people around the location where the grower would like to cultivate on a building can have a large effect on whether they do it or not. If the location were a private home, the community would be the people living with the grower. If the location were a place of work, the community would be the colleagues. The parameters related to community need to be addressed; is the community helpful and supportive in practical ways and as a motivator (UC3)? Do they see the growing as a nuisance (UC4)? The community could contribute to the knowledge where they may have shared ideas, inspired and given reassurance (UC4). As shown Knowledge of HOW and WHY to cultivate edible plants on buildings can be shared with the community, as well as community feeding into Knowledge (Figure 5).

**Table 1: Table showing which parameters are addressed with knowledge of how and why to cultivate edible plants on buildings**

Parameters addressed by knowledge of HOW to cultivate edible plants on buildings	Parameters addressed by knowledge of WHY to cultivate edible plants on buildings
BP1 Space requirements for productivity aims, storage and propagation (26 participants) BP2 Access to irrigation (24 participants) BP3 Access to plants (23 participants) BP4 The availability of other space for cultivation (21 participants) BP5 Access to suitable growing medium (20 participants) BP6 Climate around building impacting cultivation (20 participants) UC3 Help and support from others (24 participants) UK1 Skills and confidence of gardening (24 participants) UP1 Time needed (24 participants) UP2 Accessibility of resources and facilities (20 participants) BPP2 Perceived safety of cultivating on a building BK1 Knowledge of building structure BK2 Knowledge of existing examples of cultivating edible plants on buildings BK3 Knowledge of building construction BP7 Angle of surface UPP6 Impact of pollution UP4 Ownership of space UP5 Climate and light UP6 Transient lifestyle UP7 Proximity to growing space UP8 Physical and mental health UP9 Possibility of vandalism and theft UP10 Visibility of space UK1 Skills and confidence of gardening UK2 Project management and communication skills UK3 Cooking skills and healthy food literacy UC2 Share ideas, inspire, reassurance UC3 Help and support from others UC5 Nuisance to others UE1 Expense UE2 Financial incentives	BPP1 Opinion of using spare space on buildings (20 participants) UPP1 Interest, enjoyment, opinions, ideas and aims (29 participants) UPP3 Less Chemicals and more nutrients UPP4 Value of crop vs. value of space UPP5 Commitment and determination UPP7 Supporting growers UP3 Aesthetics of the space (20 participants) UC1 Community cohesion UC4 Perceived attitude and judgement of others BK4 Knowledge of benefits of cultivating on buildings BPP3 Beliefs about new technologies

There has been a lack of understanding of people (users) in relation to cultivating edible plants on buildings. This research used empirical data in order to identify the parameters that affect individuals to

cultivate edible plants on buildings. This increased understanding informs anyone who plans to integrate edible plants with buildings in relation to the users who would be planning, maintaining, harvesting and eating edible plants. The findings of this research can be used in the planning, design and implementation of systems for cultivating edible plants on buildings by developing an understanding of the people who will use or are using the systems. The findings can be used for proposed systems and also for re-assessing existing systems that may not be working successfully. They can also be used for policy development.

---

# The Weekend Food Odyssey: Perceptions of Accessibility to Food Outlets

Christian Kelly Scott<sup>1</sup>, Kathryn Colosanti<sup>2</sup>, and Dr. Courtney Pinard<sup>3</sup>

<sup>1</sup>Department of Agricultural Economics, Sociology, and Education; Pennsylvania State University, University Park, PA

<sup>2</sup>Center for Regional Food Systems; Michigan State University, East Lansing, MI

<sup>3</sup>Gretchen Swanson Center for Nutrition; Omaha, NE

---

## Abstract

Much attention has been given to the impact of the built environment on access to healthy, affordable and culturally appropriate food. Yet the interrelationships between a myriad of factors impacting individuals' food acquisition patterns, as well as individuals' level of satisfaction with those patterns, remain insufficiently understood. In this paper, we argue there is a fundamental mismatch between a neo-liberal concept of limited food access, which embeds the assumption – often imposed by external actors – that the lack of proximity to food retail sites makes acquiring food unreasonably difficult, and the perceptions low-income individuals hold of their own lived experience. Drawing on in-depth interviews, we compare responses to closed-ended questions about transportation-related food access barriers with open-ended descriptions of individuals' actual transportation patterns. We find that while the vast majority of interviewees stated that transportation is 'never' a problem, their described experiences reveal long travel times and other challenges to reach grocery stores. Our findings shed light on the power imbalance in the framing of food access and the complexity of utilizing planning and design for more equitable food access and have important implications for food access measurement and interventions as well as the theoretical underpinnings of city and regional food systems and, more generally, built environment.

---

## Introduction

Identifying and exploring the causes of limited food access is both extremely important and surprisingly difficult. Efforts to measure the extent of the food access challenges and efforts to address it are shaped by complex and multi-layered social, economic, and political realities, which are too often ignored in operational definitions of food access. Transportation dimensions of acquiring food, in particular, seem to be poorly understood (Rose & Richards, 2004). It is important to consider how shopping decisions relate to an individuals' built environment, the circumstances that yield particular transportation patterns, and how individuals perceive the relative ease or difficulty of these patterns. While some research has shown an association between food retail environments and dietary patterns or health outcomes (Caldwell et al., 2008; Gallagher, 2007; Moore et al., 2008), other research has shown little or no correlation (Boone-Heinonen et al., 2011; Caspi et al., 2012; Cummins et al. 2005; Hill & Naar-King, 2014; Pearce et al., 2008). Some of these contradictions may stem from assumptions and methodologies that may misrepresent the realities of the communities studied (Odoms-Young et al., 2009; Sharkey & Horel, 2008), such as a reliance on objective, distance-based measures (e.g., buffer zones or Euclidean distance) of access that fail to account for additional dimensions of access, such as affordability and product quality (Caspi et al., 2012; Gustafson et al. 2011; Usher 2015). Distance-based measures of food accessibility can also be modeled based on different assumptions, resulting in completely different maps (Goldsberry et al., 2010). Geographic proximity may be of greater importance for small shopping trips than for large shopping trips and local food environments may be more salient for populations with fewer resources (Hirsch & Hiller, 2013). For example, while Franco and colleagues (2009) found that healthy food availability at stores within individuals' immediate vicinity (i.e., census tract) was strongly correlated with dietary behavior when compared to stores further out (within 1 mile), they also found no consistent correlations between living in an area with no stores within one mile and dietary patterns, hypothesizing that this was due to the heterogeneity of individuals in this circumstance. In other words, distance to a store alone does not have sufficient explanatory power for shopping behaviors and dietary patterns. Assumptions that individuals are constrained to the choices available in their immediate vicinity may also give rise to discrepant findings. Individuals' activity spaces extend well beyond their neighborhood (Zenk et al., 2011), with a smaller portion of consumers choosing to shop at

the supermarket closest to their home (Hirsch & Hiller, 2013). Furthermore, a minority of people shop at single outlet-type, let alone a single store (Karpyn et al., 2014).

A more nuanced understanding of food acquisition behaviors and challenges is essential in helping planners look beyond a single mode of inquiry that predominantly serves a powerful elite (Hoch, 1992). Beyond assessing the geographic proximity of food outlets, the role of planners extends into understanding the social and political dimensions of food access. Just-city theorists purport that equity can be achieved through a more balanced distribution of power, increasing the voice and decision-making power among the working class (Fainstein, 2000). Friedmann (1993) argues that planners need to become more involved and engaged in the process and outputs of their planning, and community members impacted by the planning should conversely become more active in the planning process. Planners can aid in this process by demystifying the planning process as well as how local government works, in order to remove some systematic barriers to a democratic planning process (Forester, 1988). Collaborative planning and communicative planning theory provides a basis to 'neutralize' power (Healy, 2003). Power distribution can span power dynamics in relationships as well as power to make things happen (Giddens, 1984).

Given variation across localities and regions, and the importance of considering issues from a decentered view of planning, unique characteristics of food access should be considered (Friedmann, 1993). One example of a factor that may influence perceptions of food access differentially across regions and localities is the type of transportation individuals utilize and how available means of transportation interact with the built environment (Fuller, et al., 2013). Access to public transportation has been shown to reduce the probability of food insecurity, particularly in low-income African-American households (Baek, 2016). However, an inability to access private transportation presents additional challenges in shopping for food both for residents who live relatively close to stores (i.e., within 1.6 miles) and those who do not (Coveney & O'Dwyer, 2009). With a growing body of literature on food access, there remains limited understanding of the lived experience of low-moderate resource individuals with respect to travel to food retail sites, and even less understanding of how these individuals adapt to their environment or perceive their experiences. A richer understanding of the ways people reach food outlets is essential in enabling planning and design that promotes equitable access to healthy food environments.

## **Methodology**

Between March and May 2016, we conducted 14 in-depth, semi-structured cognitive interviews centered on use of and transportation to different food outlet types, factors motivating choice of food outlets, and perceptions of access to food choices. For the purposes of this research, we defined food outlets as any location at which an individual obtained food for consumption at home, including, supermarkets or large grocery stores; small grocery stores; convenience stores; dollar stores; drug stores; health food stores; food pantries or food banks; farmers' markets or other farm-direct outlets; and household or community gardens. The cognitive interviews also explored what 'neighborhood' meant to participants in order to better understand how neighborhood food access is experienced.

The cognitive interviews consisted of respondents verbally completing a close-ended survey with an interviewer and responding to open-ended questions about the terms and concepts in the survey questions as well as about the experiences reflected in respondents' answer choices. The cognitive interviews were designed to both test the survey instrument and enable an in-depth exploration of low-income individuals' perceptions of food access dynamics in an urban context. The interviewer utilized probing questions to ask respondents to explain their thought process behind their responses to the survey questions.

Respondents were identified through a convenience sampling procedure, targeting locations where low-income populations were likely to acquire food. The research team recruited respondents in-person and through flyers at locations in Lansing, Michigan, specifically a local food pantry site, a farmers' market that accepted SNAP benefits, several grocery stores, as well as an office of the Michigan Department of Health and Human Services where individuals sign-up for SNAP benefits. All interviews were conducted at a neighborhood center in northwest Lansing. This neighborhood center houses a food pantry and a

community garden, among other non-food related programs, and some respondents were recruited at this location. An incentive of twenty dollars was provided at the beginning of each interview. The study was deemed to be exempt in accordance with federal regulation by the Michigan State University Institutional Review Board. The interviews took between thirty and ninety minutes and detailed notes were taken by the interviewer. Interviews were audio recorded and more comprehensive notes generated at a later date. Analysis triangulated these detailed notes, select audio recordings of significant passages and survey responses to comprehensively examine each interview both individually, and in comparison, to the full data set. One respondent sent additional responses to the interview questions by e-mail and these were included in the analysis.

Following the principles of Willis (1999), we used an iterative process of data collection and analysis throughout. The research team met four times throughout the data collection process to reflect on the themes emerging from the subset of cognitive interviews completed in the weeks preceding the meeting. By successively reflecting on interview findings, the research team was able to edit the survey instrument and cognitive interview script to clarify terms respondents found confusing, simplify burdensome questions, and add answer choices based on emergent concepts in order to progressively capture richer and more robust data through the data collection process, while maintaining fidelity to the overarching research questions.

The 14 subjects in this study were primarily white (n=12), female (n=11), older adults (n=8 age 55 and older). One respondent identified as black, one as American Indian and two as Latino. The average household size was 2.2 persons. Only three respondents had children under the age of 18 living at home and the average age (based on the midpoint of the ranges given in the answer choices) was 54. All respondents estimated household annual income as \$50,000 or less. Nine of the respondents indicated making \$20,000 or less annually. Based on zip codes, all respondents lived in Lansing; the largest number (n=4) lived on the city's north side.

Final analysis used the qualitative data analysis software NVivo 11 for Mac (QSR International Pty Ltd., 2016). Thematic codes were developed from the analysis notes derived from research team meetings, survey responses, and detailed interview notes. Consistent with thematic qualitative analytical techniques, the authors used a constant comparative method of analysis and coded emergent themes (Patton, 2002). Cognitive interview recordings and notes were consulted throughout the analysis process.

This research took place in the city of Lansing, the capital of Michigan with a population of approximately 116,000 (United States Census Bureau, 2016). According to research by the Food Trust, which looks at whether weekly supermarket sales by census tract are above or below the state average, much of Lansing is considered "low supermarket sales and low income" (Manon et al., 2015). The USDA's Food Environment Atlas states that nearly 33% of the population of Ingham County, which encompasses the majority of the city of Lansing, have low access to food retail and 13% are low income *and* have low access to food retail (Economic Research Service, 2010). In our personal observations, neighborhood groups and activists often describe the downtown and neighborhoods of Lansing as areas of low food access, although they are not devoid of food outlets. As in many cities, Lansing's large supermarkets are primarily located on the outskirts of the urban core (Goldsberry et al., 2010). And a disproportionate number of grocery stores in the area, particularly health and natural food stores, are located in Lansing's more affluent neighbor, East Lansing, which is home to Michigan State University.

## **Results**

### *Challenges to Food Acquisition*

Comparisons between our survey findings and interview findings indicate that some respondents' quantitative ratings of their food access experiences appear to diverge from the qualitative descriptions of their experiences. In looking at the survey responses, only one of the fourteen participants' responses to the close-ended questions on barriers to accessing fresh fruits and vegetables indicated that transportation presented barriers on a regular basis (see Table 1). Participants identified a variety of transportation modes used to reach food retail outlets. Table 1 shows the how the primary mode of transportation indicated by study participants compares with their perception of the degree to which transportation is a barrier. Most respondents (n=8) drove their own car; the other six got rides from a

family member or friend, walked, biked, or used public transportation. Three of the individuals who lacked access to a private vehicle, still indicated that transportation is “never” a problem.

**Table 1. Transportation Mode and Perceived Barrier of Distance.**

	How often is transportation a problem for you in getting fresh fruits and vegetables?		
<b>Transportation Mode</b>	<i>Never</i>	<i>Rarely</i>	<i>Often</i>
Drive own car	6	2	0
Ride with friend or family	1	0	0
Take Bus	1	0	1
Bike	1	1	0
Walk	0	1	0

Interview findings help shed light on the lived experience of getting to food outlets and reinforce the idea that people are rarely inclined to describe their daily realities as “difficult.” In contrast to the survey results, interview findings showed that most participants, regardless of their transportation mode, had at least occasional difficulty reaching food stores. For those who drove their own vehicle, affording gas was a major limitation, with many participants indicating a need to shop at closer locations in order to save money on fuel costs. Some participants also indicated that the high cost of fuel limited them from shopping at their preferred stores or prevented them from finding the best deal across multiple stores. Those without cars also lacked an ability to deal shop. As one person stated, *‘If people don’t have cars (they) end up spending more on food because they can’t deal shop a wider variety of stores.’* Multiple participants also mentioned that they would have trouble accessing food if their car was in need of repair.

For participants utilizing alternative forms of transportation, such as riding the bus system, walking, or riding a bike, reaching food retail outlets was significantly more difficult during the winter season, due to the snow and cold. Yet summer and warm conditions also brought concerns around transporting perishable items. For those who utilized the bus, the bus routes and bus stop locations dictated shopping behaviors and the choice of food outlet, including both pantry sites and retail stores. One participant indicated *‘I spend all of Saturday getting on buses for food.’* And *‘Distance is based on the bus routes and not (miles).’* Participant responses also revealed the ways in which bus reliance necessitates changes in shopping patterns depending on the time of year, so that food will not spoil on the commute during the warm months and so the wait for bus connections will be bearable in the cold months. Many participants indicated that there were numerous unhealthy food options within short walking distance, but there were more limited healthy and affordable options nearby.

One study participant spoke of a ‘weekend food odyssey’, involving trips to two grocery stores with at least a 45-minute bus ride to each location. The participant indicated that shopping for food became a much more challenging activity after she learned she needed to restrict her diet for health reasons. For this participant, who sought out specialty stores in order to find foods meeting her dietary requirements, shopping took at least two hours, and sometimes it even took all weekend, with a trip to a store on one side of town one day and a second trip to a store on the other side of town the next. This shopper indicated that winter is particularly hard and that she never ventures out for just one or two items. She also does not go shopping when it is raining due to the arduous conditions. The participant stated, *‘I have to take two buses to get to (local farmers market) and I have to worry about the buses stop running. And in the winter it is difficult.’* The worry for participants utilizing the bus system is that buses do not run late enough into the day, have limited route availability, are variable in their route timing, and can be affected by adverse weather conditions. She sought out emergency food pantries but indicated that the quality of the food was limited, they are in locations that are difficult to access, and involve long lines. This individual was the only person in this study to indicate that transportation was “often” a barrier.

Even when interviewers probed on what types of hypothetical barriers to food access respondents might envision, many were unable to provide a clear answer. For example, one participant said, *‘Not sure about*



*transportation question because it is not a problem to me and it's hard to imagine other people that might have a problem.'* Many participants simply said they could not think of any transportation barriers initially. One participant said, in response to how often they face transportation barriers, *'Never because I ride my bike.'* and *'What obstruction am I going to bump into?'*

When participants were asked to outline scenarios that would create a barrier to accessing food, responses included a car breaking down or inclement weather. Participants responses to weather incidents ranged from not going shopping due to walking in the rain to not being able to drive to the store due to snow accumulation. Immediately after saying that he never has any transportation barriers, one participant described *'(It) would be a problem if I didn't have my own vehicle or my car was in the shop. Or bus or rely on others or have more time to walk.'* Furthermore, many participants indicated qualitatively that their car breaking down would be a barrier to accessing food, illuminating the reality of transportation barriers. One person recognized challenges of reaching food outlets others face, saying *'Some friends have an unreliable car and kids/work and they have difficulty. Also, not knowing where food is. It's hard for her to be able to get there.'*

Finally, when queried about what a potential transportation barrier would be, many participants indicated that *'Ten miles would be a problem. That is never going to happen.'* Many participants indicated this threshold of ten miles when asked to name a distance that would potentially represent a barrier. If limited to walking as a mode of transportation, smaller distances would become challenging for accessing food. For example, it *'would be a problem if I couldn't walk and I have been in that situation before... More than two blocks (would be a problem).'*

#### *Preferences for Stores and Mobility Strategies*

The full concept of access requires not just an ability to reach any food retail outlet, but an ability to reach a store deemed desirable, which is influenced by a wide range of factors. In looking at the factors most important to respondents in deciding where to obtain food, we found that both perceptions of food outlets and store preferences varied significantly across study participants. Cost was identified as a major factor in choosing a food retail site among nearly all participants. In addition, many participants emphasized convenience, variety, and feeling comfortable and safe, when explaining what constitutes a 'store that meets my needs.' As one participant described, *'Easy access (is) stores that have the items I need and one stop and affordable.'*

#### *Conceptualizations of Distance and Neighborhood*

Understanding food access necessitates unpacking the concept of a 'neighborhood' and perceptions of distance to food outlets, as well as elucidating the area people are comfortable travelling within on a day-to-day basis. In this study, participant responses reflected four conceptual categories underlying the idea of "neighborhood" and measures of distance: spatial (e.g. "a mile or two is my neighborhood"), environmental (e.g. "the streets in my area"), social (e.g. "The concept of neighborhood has departed because of mobility. People don't stay; they move in and out."), and temporal (e.g. "within 10 minutes of my house").

When interviewers probed on what distance meant to respondents in the context of food access, half of the participants utilized a consistent conceptualization in one of the aforementioned categories, while the other half of participants spoke of distance in ways that mixed spatial, social and environmental and temporal concepts. One participant used three distinct concepts in explaining distance, *'Distance (is) both time and miles because going miles on the bus can take an hour... Distance depends on the weather, (it) is based on the bus routes.'* For this person, the location of the bus routes defined their sense of distance; yet the statement also demonstrates that perceived distance to food retail sites is situational, changing in response to weather conditions, rather than absolute.

Participants similarly described neighborhoods in different conceptual categories. Some used geographic boundaries of neighborhoods; delineating by indicating blocks and major city streets. Other participants indicated *'a stone's throw'*, a square mile, and North-South-East-West delineations of their urban area. Still others drew on social boundaries when conceptualizing their neighborhood. These social definitions of distance and neighborhood consider the people with whom they interacted with on a regular basis. For example, the idea of *'my street'* includes where the participant knows people in their area.

Other references to the social environment included schools, events that brought people together, places where children could walk, and included local landmarks as boundaries. A participant described, *'My home bubble... Where I spend my time, where I live and interact with people.'* Others indicated a neighborhood as a vestige of the past in Lansing where housing units are now dominated by rental units, which respondents' view as harmful to the social idea of a neighborhood. As one participant said, *'(Neighborhood is) a thing of the past. Departed because people move in and out. Renter not owners. (It) affects the idea of neighborhood and community.'* Some participants perceive their neighborhoods to be unsafe and, therefore, uncomfortable for them to walk or move about.

## Discussion

While this research draws from a relatively small set of interviews, the findings shed light on the lived experiences of low-resource individuals in accessing food outlets and the themes that emerged have important implications for how food access is conceptualized, measured and addressed. Whereas researchers and practitioners alike often narrowly conceptualize food access as Euclidean distance to food retail services (Alkon, 2013), our findings reveal that participants have multifaceted conceptualizations of distance and neighborhoods that may or may not correspond to particular distances from their homes. Our findings further demonstrate that distance to food outlets is contextual and depends not only on the mode of transit available but the time of year and particular weather conditions. The idea of distance as both situational and absolute allows for more holistic examinations of food system planning and human activity spaces.

When interviewees were prompted to describe their means of accessing food outlets, numerous challenges emerged. For those who rely on personal vehicles, few had a contingency plan in the event their car experienced technical trouble and many found it difficult to afford sufficient gas to enable 'deal shopping' at multiple food outlets. For those who relied on bus transportation, the routes and stop locations dictated the stores they could access; warm, cold and rainy weather all presented unique challenges and travel time was substantial. Several participants indicated that walking to the stores closest to their homes was not desirable due to safety concerns in the neighborhood as well as the fact that nearby stores tended to stock limited healthy food options. Similarly, another qualitative study suggested that low-income families cope with transportation challenges in a variety of ways, and that access to a personal vehicle ultimately expands food-shopping destinations (Clifton, 2004). Despite describing challenging experiences, when responding to a close-ended question on frequency of experiencing transportation barriers to reaching food outlets, only one of the fourteen interviewees indicated transportation barriers were 'often' experienced. This dichotomy between the experiences that participants described and the way participants perceived those experiences has several important implications. As Alkon et al. (2013) noted, the agency and resiliency of low-resource individuals in reaching food outlets is too often discounted. Planning professionals may consider their approach to promoting community sustainability, to ensure that unjust status quo phenomena are not encouraged, and that social justice remains the focus point of efforts (Marcuse, 1998). Our findings demonstrate that there are differences in how food access is conceptualized and experienced across individuals. Those in the planning profession should consider this diversity, and leverage the local experiences of residents by engaging and redistributing power among those most impacted by planning decisions (Fainstein, 2000; Friedmann, 1993; Giddens, 1984).

Metrics for capturing food access barriers may be significantly under-representing the phenomenon researchers are attempting to quantify for two reasons. Numerous participants indicated transportation barriers would not arise unless they had to travel ten miles or more. In other words, it appears that many people are happy to travel further to access food than is commonly assumed, especially if they have access to a private vehicle. Furthermore, our findings show that what may be labeled as a 'barrier' by an outside observer is often not labeled as such by the one living the experience. In an extreme example, a factory employee in Michigan became locally famous for walking over 20 miles on his daily commute to work without protest or complaints (Laitner, 2015). The story illustrates how people find a way to get where they need to be and as long as they ultimately get there, there is no barrier in their minds.

Ultimately, our findings reveal the importance of seeking community residents' perspectives directly when defining and addressing limitations to food outlet accessibility. If the etic and emic perspectives are at odds, it is essential to look beyond unidimensional food access measures and work to more comprehensively understand the nature and extent of the particular realities involved in obtaining

healthy food faced by individuals in a given community (Alkon et al., 2013; Usher, 2015). In the words of Dr. Constance (2008, p. 154):

*As a community of agrifood scholars, we must embrace a praxis and volunteer in service of this movement. We must commit to a praxis of public social service that moves beyond the comfortable, conservative confines of the academy. Whatever the focus of our work, the long-term goal remains the same; emancipatory change to end injustice.*

## Conclusions

Participants in this study articulated multi-dimensional and contextualized conceptualizations of distance in relation to reaching food outlets. Participants also described a wide range of transportation-related challenges across multiple transportation modes. For those who had access to a private vehicle, challenges included affording gas to reach food outlets further away or to 'deal shop' at multiple locations, vehicle reliability and the lack of a contingency plan in the event of car trouble. For those who utilized the bus, the bus routes and stop locations dictated which food outlets they were able to reach and weather impacted the feasibility of making a trip or maintaining food at safe temperatures. For several respondents, walking to stores proved undesirable due to safety concerns or a lack of healthy options in the vicinity. Yet, despite the rich descriptions of these challenges, all but one of the fourteen interviewees responded to close-ended questions indicating that transportation was rarely or never a problem in accessing food outlets. Several lessons can be drawn from the implications of our findings, particularly as they relate to incorporating individuals and communities into the planning and design process around equitable food access. Oversimplified operationalization of food access measures, including assumptions of Euclidean distance, exemplifies an underlying power imbalance in the food system planning process. By including lived experiences and a more democratic approach in food systems planning, a critical and measured examination of issues that face vulnerable and underserved populations can occur. Doing so will leave planners better-equipped to address societal inequities perpetuated within built environments.

The insights from the interviews highlight the disparity in operationalization and conceptualization among neo-liberal paradigms in built environment planning informed by close-ended surveys for assessing food access issues and real-world perceptions that seek to engage local communities in defining food environment parameters. Power imbalances can lead to planning and design structural inequities within food access planning and food systems questioning. However, by acknowledging and focusing on vulnerable and underserved populations' perceptions, planning and design can be used to strengthen local food systems and improve health disparities. A varied and nuanced conceptualization of distance, an appreciation for the wide variety of transportation modes and contexts, and a focus on the social and cultural context within lived experiences can all help inform these efforts. The insights gained from this study can help spur more equitable food environment planning processes and outcomes and encourage further research into the multi-faceted dynamics of accessing food outlets in varying contexts and community settings.

## References

- Alkon, Alison, Block, Daniel, Moore, Kelly, Gillis, Catherine, DiNuccio, Nicole, and Chavez, Noel (2013) Foodways of the urban poor. *Geoforum*, **48**, pp. 126-135.
- Baek, Deokrye (2016) The Effect of Public Transportation Accessibility on Food Insecurity. *Eastern Economic Journal*, **42**, pp. 104-134.
- Boone-Heinonen, Janne, Gordon-Larsen, Penny, Kiefe, Catarina I., Shikany, James M., Lewis, Cora E., and Popkin, Barry M. (2011) Fast Food Restaurants and Food Stores: Longitudinal Associations With Diet in Young to Middle-aged Adults: The CARDIA Study. *Archives of Internal Medicine*, **171**, pp. 1162-1170.
- Caldwell, EM, Kobayashi, MM, DuBow, W, and Wytinck, S (2008) Perceived access to fruits and vegetables associated with increased consumption. *Public Health Nutrition*, **12**, pp. 1743-1750.

Caspi, Caitlin E., Kawachi, Ichiro, Subramanian, S.V., Adamkiewicz, Gary, and Sorensen, Glorian (2012) The relationship between diet and perceived and objective access to supermarkets among low-income housing residents. *Social Science & Medicine*, **75**(7), pp. 1254-1262.

Clifton, K. J. (2004). Mobility strategies and food shopping for low-income families: A case study. *Journal of Planning Education and Research*, **23**(4), pp. 402-413.

Constance, Douglas (2008) The emancipatory question: The next step in the sociology of agrifood systems. *Agriculture and Human Values*, **25**, pp. 151-158.

Coveney, John and O'Dwyer, Lisel (2009) Effects of mobility and location on food access. *Health & Place*, **15**, pp. 45-55.

Cummins, Steven, Findlay, Anne, Petticrew, Mark, and Sparks, Leigh (2005) Healthy Cities: The Impact of Food Retail-led Regeneration on Food Access, Choice and Retail Structure. *Built Environment*, **31**(4), pp. 288-301.

Economic Research Service (ERS) (2010) U.S. Department of Agriculture (USDA). Food Environment Atlas. <https://www.ers.usda.gov/data-products/food-environment-atlas/>

Fainstein, Susan S. (2000) "New directions in planning theory." *Urban affairs review*, **35**(4), pp. 451-478.

Forester, John (1988) *Planning in the Face of Power*. Univ of California Press, CA.

Franco, M., Diez-Roux, AV., Nettleton, J.A., Lazo, M, Brancati, F, Caballero, B, Glass, T, and Moore, L.V. (2009) Availability of healthy foods and dietary patterns: the Multi-Ethnic Study of Atherosclerosis. *The American Journal of Clinical Nutrition*, **89**, pp. 897-904.

Friedmann, John (1993) "Toward a non-Euclidian mode of planning." *Journal of the American Planning Association*, **59**(4), pp. 482-485.

Fuller, D, Cummins, S, and Matthews, SA (2013) Does transportation mode modify associations between distance to food store, fruit and vegetable consumption, and BMI in low-income neighborhoods?. *The American Journal of Clinical Nutrition*, **97**(1), pp. 167-172.

Gallagher, Mari (2007) Examining the Impact of Food Deserts on Public Health in Detroit. Mari Gallagher Research & Consulting Group, Chicago, IL.

Giddens, Anthony (1986) *The constitution of society: Outline of the theory of structuration*. Vol. 349. Univ of California Press.

Goldsberry, K., Duvall, C. S., Howard, P. H., & Stevens, J. E. (2010). Visualizing nutritional terrain: a geospatial analysis of pedestrian produce accessibility in Lansing, Michigan, USA. *Geocarto International*, **25**, pp. 485-499.

Gustafson, A.A., Sharkey, J., Samuel-Hodge, C.D., Jones-Smith, J., Cordon Folds, M., Cai, J., and Ammerman, A.S. (2011) Perceived and objective measures of the food store environment and the association with weight and diet among low-income women in North Carolina. *Public Health Nutrition*, **14**, pp. 1032-1038.

Healey, Patsy (2003) "Collaborative planning in perspective." *Planning theory*, **2**(2), pp. 101-123.

Hill, Alex, and Naar-King, Sylvie (2014) *Fruit and Vegetable Availability, Quality, & Consumption in Detroit's Food Desert among African American Adolescents with Obesity*. Paper presented at the Annual Meeting of the American Public Health Association, New Orleans, LA.

Hirsch, J and Hillier, A (2013) Exploring the role of the food environment on food shopping patterns in Philadelphia, PA, USA: A semiquantitative comparison of two matched neighborhood groups. *International Journal of Environmental Research and Public Health*, **10**, pp. 295-313.

Hoch, C. J. (1992) The Paradox of Power in Planning Practice. *Journal of Planning Education and Research*, **11**, pp. 206-215.

Karpyn, A., Tappe, K., Hillier, A., Cannuscio, C., Koprak, J., and Glanz, K. (2014) Where urban residents shop for produce. *Journal of Agriculture, Food Systems, and Community Development*, **4**, pp. 129-141.

Laitner, Bill (2015) *Heart and sole: Detroiter walks 21 miles in work commute*. Detroit Free Press. February 10, 2015. Accessible online: <http://www.freep.com/story/news/local/michigan/oakland/2015/01/31/detroit-commuting-troy-rochester-hills-smart-ddot-ubs-banker-woodward-buses-transit/22660785/>

Manon M., Church D., Treering D. (2015) Food for Every Child: The Need for Healthy Food Financing in Michigan. Philadelphia, PA: The Food Trust. Available from: [http://thefoodtrust.org/uploads/media\\_items/michigan-mapping-final.original.pdf](http://thefoodtrust.org/uploads/media_items/michigan-mapping-final.original.pdf).

Marcuse, Peter (1998) "Sustainability is not enough." *Environment and Urbanization*, **10(2)**, pp. 103-112.

Moore, L.V., Diex Roux, L.V., Nettleton, J.A., and Jacobs, D.R. (2008) Associations of the local food environment with diet quality – a comparison of assessments based on surveys and geographic information systems. *American Journal of Epidemiology*, **167(8)**, pp. 917-924.

Odoms-Young, A.M., Zenk, S., and Mason, M. (2009). Measuring food availability and access in African-American communities: Implications for intervention and policy. *American Journal of Preventive Medicine*, **36(4S)**, pp. S145-S150.

Patton, MQ (2002) *Qualitative Research and Evaluation Methods*. SAGE, Thousand Oaks, CA.

Pearce, J, Hiscock, R., Blakely, T., and Witten, K. (2008) The contextual effects of neighbourhood access to supermarkets and convenience stores on individual fruit and vegetable consumption. *Journal of Epidemiology and Community Health*, **62(3)**, pp. 198-201.

QSR International Pty Ltd (2016) NVivo for Mac. Version 11.3.2.

Rose, D, and Richards, R (2004) Food store access and household fruit and vegetable use among participants in the US Food Stamp Program. *Public Health Nutrition*, **7(08)**, pp. 1081-1088.

Sharkey, J.R. and Horel, S. (2008) Neighborhood socioeconomic deprivation and minority composition are associated with better potential spatial access to the ground-truthed food environment in a large rural area. *The Journal of Nutrition*, **138**, pp. 620-627.

United States Census Bureau (2016). QuickFacts. Available from: <https://www.census.gov/quickfacts/fact/table/lansingcitymichigan/PST045216>

Usher, Kareem (2015) Valuing all knowledges through an expanded definition of access. *Journal of Agriculture, Food Systems, and Community Development*, **5(4)**, pp. 109-114.

Willis, Gordon (1999) *Cognitive Interviewing: A "How To" Guide*. Research Triangle Institute.

Zenk, Shannon N., Schulz, Amy J., Matthews, Stephen A., Odoms-Young, Angela, Wilbur, JoEllen, Wegrzyn, Lani, Gibbs, Kevin, Brauschweig, Carol, and Stokes, Carmen (2011) Activity space environment and dietary and physical activity behaviors: A pilot study. *Health & Place*, **17(5)**, pp. 1150-1161.

---

# **Alleviating tourist pressure on city centres by fostering alternative food experiences away from tourist hotspots**

**Helena Solman<sup>1</sup>, Arnold van der Valk<sup>2</sup>, Bas Pedroli**

<sup>1</sup>Wageningen University, Wageningen, The Netherlands

Email: [helena.solman@wur.nl](mailto:helena.solman@wur.nl)

---

## **Abstract**

Planning for sustainability in cities is a complex task in times of neoliberal economies pursuing ever-lasting growth rather than sustainable levels of developments. Tourism is one of the fastest growing industries in the world, but it is to a large extent a self-organized activity controlled by tourist demand. As a result of the boom in city tourism, cities around the globe are faced with problems caused by the large amounts of visitors that diminish the quality of life in a city. Consequently, already ten years ago the WTO discussed that managing the increasing number of tourists arriving to cities in a sustainable and responsible way should be that the number one issue in tourism planning. Given this call, it is surprising that there has been little research carried out on planning measures that address the problem of carrying capacity for tourism. Therefore, there is a need for identifying alternatives to mass tourism in cities that can serve as examples of good practice and inspiration. This paper aims to partly fill this gap by exploring whether alternative food is a theme that fosters dispersion of tourists in cities. This study offers a counter- hegemonic and imaginative way of addressing the problem of tourism pressure in cities, exemplified by Amsterdam and Rome. It takes as a starting point the various possibilities and benefits of multifunctional urban agriculture and the popularity of alternative food networks and the slow food movement in cities. Alternative food increasingly attracts the interest of tourists and provides an opportunity to distract tourists away from the city centre. This finding points to the potential of using alternative food as an incentive for tourism dispersion strategies. Moreover, with alternative food tourism, a whole range of sustainability-oriented goals can be achieved in relation to healthy society, green cities, strong local economy and community empowerment.

## **INTRODUCTION**

Planners and policy makers around the globe are facing a challenge of addressing large number of issues that affect the quality of life in cities (Healey, 1998). According to the Global Health Observatory (GHO) data from 2014, 54% of the total global population lives in urban areas and in the future and these numbers are only expected to grow<sup>1</sup>. Considering the amount of people who live in- and move through cities daily, insurgent urban planning and strategic governance is needed to facilitate sustainable development and to assure a high quality of life for residents . Barcelona (Marine-Roig, 2011), Amsterdam (Riganti & Nijkamp, 2008) Rome (Celata, 2012) and Venice (Quinn, 2007) are researched examples of cities that struggle with carrying capacity for tourism as there are many signs of dissatisfaction in a way in which tourism industry influences the city, by for example, the negative impacts that Airbnb has on rent prices (Lee, 2016). On the other hand, it is not only locals who complain about overcrowding. Tourists also blame overcrowding for negatively affecting their holiday experience, which in turn impacts on the destination appeal (Santana-Jiménez & Hernández, 2011).

## **Managing the tourism capacity of city tourism**

From the economic point of view, the solution to managing tourism flows lies within the entrepreneurial ability to respond to new tourism trends which involve satisfying the demand to its economic maximum (Ateljevic & Page, 2009, p.14). However, there is a wide agreement in the scientific literature that the liberal market tends to overexploit common pool resources and so it is more likely to fail in achieving operational sustainability (Agrawal, 2002, p.56). The alternative solution is public institutions take actions that assure sustainable future. Hereby, tourism dispersion is a strategy that is meant to address the problem of overcrowding in city centers while accommodating the demand and increasing benefits. The function of dispersion is to spread tourists outside the overcrowded areas. Successfully alleviating tourism pressure from city centre by using a top down strategy might be however difficult to implement in practice, given the crucial role of city centre in urban tourism. A study of Celata (2012) showed that

the city centre acts as a magnet that attracts tourists thanks to the high concentration of touristic hot spots and infrastructures.

### **Alternative food as a possible alternative to mass-tourism**

Sustainably dispersing tourists within the city requires finding a suitable tourist target group which is interested exploring sites off-the-beaten track in tourism and a quality-oriented type of tourism that can be offered in the neighbourhoods. Local food is a common attraction in sustainable tourism as it appeals to the visitor's desire for authenticity within the holiday experience" (Sims, 2009). Food tourism has a vast potential to attract visitors to new destinations thanks to the growing interest of people in food (Getz et al., 2014, p. 44). Especially in cities, people show a renewed interest in food (Woese et al., 1997). In last years, especially alternative food gained a lot of public attention (Harris, 2009). For example, studies show that food trucks (Dubecki, 2011, Gill, 2012), farmer's markets and food events (Hall & Sharples, 2008, p.3-23, 197-249), became hipster attractions that are often linked to local identity and niche spaces. The fashion to have a food-related lifestyle goes hand in hand with people's interest in other countries and their food cultures, especially during holidays (Tellström et al., 2006). Food tourists share a deep interest in food and local cuisines and so they are willing to travel especially for the (Getz et al, 2014, p.17), however, with increased touristification, tourism destinations experienced a decline in the quality of food offerings, which stimulates foodies to search for authentic food experiences outside the tourist hot spots (Mak et al., 2012). and to avoid places that have no real historical identity or uniqueness (Albrecht, 2011).

Even though much is written about the future of food tourism in the rural and semi-rural area, very little is known about what the interests in alternative food mean for food tourism in cities. For example, very little is known about the recreational and touristic use of urban agriculture (Lovell, 2010). Even though urban agriculture has a potential for tourism and recreation, knowledge regarding how these areas could be used or how this kind of tourism could be defined is missing (Lovell, 2010).

These gaps in knowledge lead to unexplored potential of alternative food as an attraction and motivation for tourists to leave the city centre. Considering the issue of overcrowding cities, the objective of this study is to investigate if alternative food fosters tourism dispersion.

## **THEORETICAL FRAMEWORK**

### **Framework of a 'Meaningful tourism experience'**

This study uses a framework of a meaningful tourism experience to study the nature of alternative food tourism (AFT) experience in Amsterdam in Rome. This framework was developed by Mason and O'Mahony (2007) to study stories about food that are created or enhanced to promote place-based tourism. This framework identifies six possible themes of food stories for tourism. These themes are: cuisine, lifestyle, regionalism, environment, rurality and health (Mason & O'Mahony, 2007). Ideally, meaningful food tourism experiences are an adventure of exploration that includes four experiential realms: education, entertainment, escapism and aesthetics (Pine & Gilmore, 1999, p.31). Mason & O'Mahony (2007) argue that food experiences need to be analysed against tourist typology as they tend to appeal to a niche in market.

### **Theoretical planning perspective**

In this thesis project, I take a broad perspective on city and tourism planning as activities insurgent planning as "radical planning practices that respond to neoliberal specifics of dominance through inclusion – that is, inclusive governance. It characterizes the guiding principles for insurgent planning practices as counter-hegemonic, transgressive and imaginative." (Miraftab, 2009, p.32). With the outlook of insurgent planning, I focus on collaborative planning theories as sources of inspiration for designing new types of arrangements between state, market and citizens. Achieving such adaptive attitude however means structural changes in the way public institutions operate "towards a situation-specific approach, which allows alternative views to flourish" (Zhang, de Roo & van Dijk, 2015 p.161). As much of the developments in tourism occurs as a result of informal practices, the concept of self-

organization helps to study the chaotic nature of tourism developments and influences of the global networks and trends (McDonald, 2009).

## STUDY FOCUS

This study uses a case study design to answer the main research question which is: Does alternative food foster tourism dispersion in cities? This question will be answered by investigating what does alternative food tourism outside the beaten path of tourism in cities include to identify the potential that it has for spreading tourism in cities sustainably.

The term 'alternative food tourism' (AFT) is used in this paper in reference to alternative food attractions, multifunctional agriculture and alternative food tours and experiences. The main criteria used to identify what belongs to AFT is that it does not adhere to the principles of mass tourism. Herby, the framework of meaningful tourism experience helps to identify relevant experiences.

When referring to cities, I mean two case studies of this research: Amsterdam and Rome that are used in a comparative manner. Importantly, considering the problem of overcrowding, in this study the focus is given to the neighborhoods outside the city center and in the proximate countryside.

The main source of data that is used to answer this question includes semi-structured interviews. As a result of fieldwork in Amsterdam and Rome, I conducted 29 in-depth interviews and 12 exploratory interviews. This data is complemented by participatory observations in the field.

## POSSIBLE THEMES OF ALTERNATIVE FOOD TOURISM

Alternative food is a new type of food tourism. Alternative food tourism distinguishes itself from the mainstream food tourism in a city by giving an implicit focus to the meaningfulness of a food experience. In both case studies, alternative food experiences are characterized by focus on authenticity and a unique place-based story. Mason & O'Mahony (2007) proposed a framework to study food experiences. In this study, I applied their framework to study the alternative food tourism experiences in Amsterdam and Rome. Based on my findings, I identified several new themes that are particular for alternative food tourism in cities. The illustration below shows a new framework that I created, building on the framework by Mason & Mahoney (2007).



*Possible themes of the alternative food tourist (in the urban context)*

The new framework of alternative food tourism includes four new themes that are added: Sustainability & Innovation, Urban agriculture, Entertainment & Learning and Arts & Culture. In the next sections, all these themes will be elaborated and compared between cases.



In both cities, AFT is relatively well-established type of tourism outside the beaten path of tourism. Even though each case has its unique context which makes a strict comparison impossible, a few discrepancies has been noticed in relation to the importance and interpretation of possible themes of AFT. In order to illustrate this difference, the themes have been fist rated and then plotted together in a spin diagram. I used a Likert scale of 1 to 5, where the numbers represented the importance of each theme: 5= Very Important 4= Important 3=Moderately Important 2= Slightly Important 1= Not Important

The table below shows the scores for all the themes in Amsterdam and Rome.

Theme	Amsterdam	Rome
Regionalism	3	5
Rurality	4	2
Health	4	4
Arts & Culture	3	4
Entertainment & Education	4	2
Urban agriculture	5	2
Sustainability and innovation	4	2
Cuisine	3	5
Lifestyle	4	4
Environment	3	5

Then, the results from above were plotted in the diagram below to illustrate the difference.



*Themes of AFT in a spin-web diagram*

Importantly, the numbers do not represent actual value but they serve as an indication on the extent to which themes were evaluated. Finally, all these themes are interrelated and all together they create a unique combination of alternative food tourism in each city. Below, the themes are described and the argumentation for evaluation of their importance is provided.

### **Regionalism**

‘Regionalism’ relates to the importance of the regional identity in alternative food tourism in each city. In case of Amsterdam, the region refers to the Amsterdam Metropolitan Region, or the province of Noord Holland. This theme is moderately important in Amsterdam's alternative food tourism. One of the examples found in this study is the ‘Old Amsterdam Milk Tour’ which tells stories about the tradition of milk production in the region and how it was brought to the city. In Rome on the other hand, the region of Rome is very important in relation to alternative food. This can be illustrated by the importance of products with Denomination of Origin. For example, in Rome farms that produced local Pecorino and Ricotta cheese are a big tourist attraction and regional food production is an inspiration for tourism stories in most of the studied experiences.

### **Rurality**

‘Rurality’ is a theme in alternative food tourism in the transition areas of Amsterdam and Rome and their countryside. In Amsterdam, I concluded that rurality was an important theme thanks to the popularity of countryside tours. As in Amsterdam the distance from the city center to the countryside is much smaller than in Rome, the transition from city to the rural areas is much faster, also thanks to the network of cycling lines. In Rome on the other hand, it would take around 1,5 hours to cycle from the center of Rome outside the peripheries, which are very large, residential or industrial areas. With the exception on the park Appia Antica, Rome is not very well connected with its countryside compared to Amsterdam. Consequently, rurality was just slightly important theme in alternative food tourism in Rome.

### **Health**

‘Health’ as a theme in alternative food tourism is important in both cities. This importance has been evaluated based on the increased attention paid by alternative food tourists on the healthiness of the food products determined especially by the way of production. Furthermore, the importance of

healthiness was observed in the cycling as a common modality in alternative food tours. Finally, alternative food tourism often included visit in green spaces and health- promoting environments.

### **Arts & Culture**

‘Arts and Culture’ is a theme that appeared as important in Rome, especially in relation to the craftsmanship and artisanal ways of food production. Additionally, in Rome archaeological heritage and old farm buildings were often part of the stories in alternative food tourism. This theme was moderately important in Amsterdam, as it was not often part of alternative food stories. Nevertheless, some entrepreneurs in Amsterdam start to explore the possibility of connecting alternative food tourism with the cultural heritage of Amsterdam, which may indicate that this theme will become more important in the future.

### **Entertainment & Education**

‘Entertainment and Education’ covers for the importance of having fun and gaining knowledge. I concluded that education appears as an important theme in Amsterdam’s alternative food and in Rome just slightly important. Thus, even though, in Rome cooking workshops were a popular tourist activity, tours and experiences with a purpose of a knowledge transfer were hardly an experience on its own. On the other hand, in Amsterdam, alternative food tours had more often a form of educational tours.

### **Urban agriculture**

‘Urban agriculture’ as in community gardening and allotment gardens, guerilla gardening is a very important part of alternative food tourism in Amsterdam. In fact, tours of community gardens or urban foraging tours were only found in Amsterdam. While this form of urban agriculture is also present in Rome, it is less often part of tours and tourist activities, which is why I conclude that it was slightly important.

### **Sustainability & innovation**

‘Sustainability and innovation’ is identified as a new theme as experiences of alternative food were often organized around a narrative of sustainable food production or pioneering solutions in food production in cities. It was important in Amsterdam and slightly important in Rome. In fact, Amsterdam has many food projects that focus on aspects such as food waste, environmental pollution, green city, circular economy etc. whereas in Rome, it was hardly mentioned in the context of tours and projects that tourists would visit.

### **Cuisine**

‘Cuisine’ as a theme representing the focus on tasting local dishes and produce was a very important theme in alternative food tourism in Rome. Thanks to the fame of Roman cuisine around the world, alternative food tourism was often a way to find authentic and traditional food places. In Amsterdam, cuisine is also an important tourist motivation in Amsterdam, but less in the context of alternative food tourism, which was often not including consumption at all, whereas in Rome it was less often a case.

### **Lifestyle**

‘Lifestyle’ is a theme that represented tourists’ beliefs, values in relation to their consumption choices in in alternative food tourism, both on individual level and as a societal trend. For example, vegetarianism is a food-related lifestyle that influences the popularity of alternative food tourism in both capitals. All in all, people’s food-related and tourism-related lifestyle were equally important for alternative food tourism in both capitals.

### **Environment**

Environment stands for the natural characteristics of landscape such as vegetation or nature. In Rome, most of the alternative food tourism took place within the Appia Antica Park which is considered a pure

area, where natural lands are mixed with small- scale organic agriculture and farming. As a result, in Rome environment was very important, as for many alternative food tourism was equal with an escape from a build-up area. In Amsterdam on the other hand, nature was moderately important as it was emphasized only in the countryside tours. Within the city, urban agriculture offered the escape to a green environment, however, it can be argued that agriculture is not a natural area.

### **CONCLUSIONS: What does alternative food tourism mean for city and tourism planning?**

After investigating the potential of alternative food tourism, I conclude that alternative food tourism does foster tourism dispersion in cities. Namely, in Rome alternative food tourism is already a well-established tourism attraction that motivates tourists to go out to the neighbourhoods of Rome. Similarly, in Amsterdam AFT was found to be on a growing demand, especially in combination with cycling. The contribution of alternative food tourism to spreading tourists across the city is present through the big range and the number of experiences that are offered in alternative food tourism. Furthermore, the popularity of alternative food tourism in the neighbourhoods grows with the hype of local experiences offered by big companies such as 'Airbnb', 'Withlocals' or 'Eatwith'. Many of the experiences offered on these websites evolve around the theme of food. In this context, tourism offered by locals is a powerful driver of self-organizing change in the alternative food tourism sector and it affects the spatial distribution of tourists.

Studying AFT in Rome and Amsterdam allowed me to propose a new framework with possible themes for AFT in cities. This framework can be considered a building block on the framework of possible themes of culinary tourist proposed by Mason & O'Mahoney (2007). Furthermore, a contribution to the literature on the future demands in food tourism was made by conceptualizing AFT in the context of food tourism. This framework can serve as a source of inspiration for city planners and as a theoretical framework for a future research. Based on the characteristics of AFT, I argue that alternative food can be considered a suitable theme for tourism dispersion strategy in Amsterdam as it includes places that are meaningful to residents, does not exploit the stereotypical image of food culture, provides economic impulse to the local initiatives and SME's, provides incentive to cultivate local food traditions, offers a meaningful interaction with 'locals', follows the principles of slow tourism (i.e. cycling holidays) and includes only quality food products.

### **References**

- Agrawal, A. (2002). Common resources and institutional sustainability. In *The drama of the commons*. Eds. Ostrom, E. Dietz, T., Dolšák, N., Stern, P.C., Stonich, S. & Weber, E.U. pp. 41-85. Washington, DC: National Academy Press.
- Albrecht, M.M. 2011. 'When you're Here, you're family': Culinary tourism and the Olive Garden Restaurant. *Tourist Studies*. 11(2), 99-113.
- Ateljevic, J., & Page, S. J. (Eds.). (2009). *Tourism and entrepreneurship*. Oxford: Butterworth- Heinmann. pp. 9-31.
- Celata, F. (2012). Suburban hotels and the atomization of tourist space in large cities: the case of Rome. *Working Paper del Dipartimento di Metodi e Modelli per l'Economia il Territorio e la Finanza*, (102), 1-19.
- Dubecki, L. (2011) Would you cross Melbourne for a taco? *The Age, The Melbourne Magazine*, 25 November, 92.
- Getz, D., Robinson, R., Andersson, T., & Vujicic, S. (2014). *Foodies and food tourism*. Goodfellow Publishers.
- Gill, R. (2012) Right on. *The Saturday Age, Lifestyle*, 25 February, 2015.
- Global Health Observatory (GHO) (2014). Urban population growth. Retrieved from: [http://www.who.int/gho/urban\\_health/situation\\_trends/urban\\_population\\_growth\\_text/e](http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/e)
- Hall, C. M., & Sharples, L. (2008). *Food and wine festivals and events around the world: Development, management and markets*. Oxford: Butterworth Heinemann.
- Harris, E. (2009). Neoliberal subjectivities or a politics of the possible? Reading for difference in alternative food networks. *Area*, 41(1), 55-63.
- Healey, P. (1998). Collaborative planning in a stakeholder society. *Town planning review*, 69(1), 1-21.
- Lee, D. (2016). How Airbnb Short-Term Rentals Exacerbate Los Angeles's Affordable Housing Crisis: Analysis and Policy Recommendations. *Harv. L. & Pol'y Rev.*, 10, 229.

- Lovell, S. T. (2010). Multifunctional urban agriculture for sustainable land use planning in the United States. *Sustainability*, 2(8), 2499-2522.
- Mak, A. H., Lumbers, M., & Eves, A. (2012). Globalisation and food consumption in tourism. *Annals of tourism research*, 39(1), 171-196.
- Marine-Roig, E. (2011). Innovation and identity in Barcelona's tourist image as represented by souvenirs. *Catalan Journal of Communication & Cultural Studies*, 3(2), 175-193.
- Mason, R., & O'Mahony, B. (2007). On the Trail of Food and Wine: The tourist search for meaningful experience. *Annals of Leisure Research*, 10(3-4), 498-517.
- McDonald, J. R. (2009). Complexity science: an alternative worldview for understanding sustainable tourism development. *Journal of Sustainable Tourism*, 17(4), 455-471.
- Mirafteb, F. (2009). Insurgent planning: Situating radical planning in the global south. *Planning Theory*, 8(1), 32-50.
- Pine, B. J., & Gilmore, J. H. (1999). *The experience economy: work is theatre & every business a stage*. Harvard Business Press.
- Quinn, B. (2007). Performing tourism Venetian residents in focus. *Annals of Tourism Research*, 34(2), 458-476.
- Riganti, P. & Nijkamp, P. (2008). Congestion in popular tourist areas: a multi -attribute experimental choice analysis of willingness-to-wait in Amsterdam, *Tourism Economics*, 14(1), 25-44.
- Santana-Jiménez, Y., & Hernández, J. M. (2011). Estimating the effect of overcrowding on tourist attraction: The case of Canary Islands. *Tourism Management*, 32(2), 415-425.
- Sims, R. (2009). Food, place and authenticity: local food and the sustainable tourism experience. *Journal of Sustainable Tourism*, 17(3), 321-336.
- Tellström, R. & Gustafsson, I. B., & Mossberg, L. (2006). Consuming heritage: The use of local food culture in branding. *Place Branding and Public Diplomacy*, 2(2), 130-143.
- Woese, K., Lange, D., Boess, C., & Bögl, K. W. (1997). A Comparison of Organically and Conventionally Grown Foods--Results of a Review of the Relevant Literature. *Journal of the Science of Food and Agriculture*, 74(3), 281-293.
- Zhang, S., de Roo, G., & van Dijk, T. (2015). Urban land changes as the interaction between self- organization and institutions. *Planning Practice and Research*, 30(2), 160-178.
-

# Liberty or Lunacy? Exploring Framings of Self-reliance in Foodscapes

Stephanie Nuria Spijker,

PhD fellow at Research Foundation - Flanders (FWO), Department of Earth & Environmental Sciences, KU Leuven, Belgium.

---

**Keywords:** Self-reliance, foodscapes, framings, self-reliant practices

---

## ABSTRACT

Foodscapes, the ways and places in which individuals interact with food, contain a myriad of practices. This paper focuses on those practices related to growing food, for instance, permaculture. Some of these practices have a goal to be more self-reliant and thus stray from the conventional. Self-reliant practices – and at times the notions of self-reliance overall – are variably framed as anything from innovative and eco-friendly, to insane and subversive. This paper asks: while popular framings, particularly those presented through the media, seek to present these practices as distinct entities, with some being “better” or “worse”, is there some frame alignment among the different practices? To answer this, I explore how different practices are popularly framed, and contrast that with frames from people actually involved in the practices, to see where frames are incongruous and where they align. Top media search results on three practices, permaculture, transition towns and prepping, are compared to empirical evidence gathered from in-depth interviews with individuals involved in these practices. I argue that there are several frame alignments between practices that, on the surface, appear to be totally different and yet have shared features in terms of underlying values, motivations and goals. It is therefore necessary to consider looking beyond popular framings when examining self-reliance, foodscapes and the practices that shape them.

## 1. Foodscapes and framing

Foodscapes is a term within the field of food studies that has become an increasingly popular way to describe the many ways in which humans relate to food (Mikkelsen 2011; MacKendrick 2014). They include “elements of materiality and ideology” (Johnston et al. 2009, p513) encompassing both the tangible aspects of food production, distribution and consumption, as well as intangible aspects such as meanings that may be attached to particular foods or food-related practices. Foodscapes, as defined by, MacKendrick (2014, p16) are “the places and spaces where you acquire food, prepare food, talk about food, or generally gather some sort of meaning from food” as well as the “institutional arrangements, cultural spaces, and discourses that mediate our relationship with our food.” There are many food-related practices, in terms of growing food, that have always been a part of foodscapes that we are familiar with and others which have experienced a resurgence in popularity due to increasing concerns about access to fresh, healthy produce. Some of these practices include urban farming, community supported agriculture and permaculture. Other broader practices, such as prepping, may also include food growing as part of a broader lifestyle commitment to being more self-reliant. Self-reliance, in the context of this paper, refers to the desire to be more independent from conventional systems and any actions taken towards that goal. For instance, growing food for oneself to completely, or partially, replace purchases from supermarkets. While many of these practices are not explicitly geared towards being totally self-reliant, they all embody principles that strive towards independence from conventional systems.

Being self-reliant through engaging in the above mentioned practices can have different connotations depending on how the practice is framed, or even how the people engaging in the practice are framed. To outsiders, the meaning and substance of the practice is often entirely formed by their first exposure to it. The process by which an individual forms his or her thought frames by learning from outside sources is called ‘framing’. Ervin Goffman was the earliest sociologist to extensively study frames, which he called ‘schemata of interpretation’, based on his observations of human interaction and the making of subjective meaning (D’Angelo & Kuypers 2010: p. 46 & 233, Denzin & Keller 1981: p. 3). According to Chong & Druckman, framing effects occur when ‘(often small) changes in the presentation of an issue or an event produce (sometimes large) changes of opinion’ (2007: p. 104). It is a process that evolves over time, by which people ‘develop a particular conceptualization of an issue or reorient their thinking about an issue’ (Chong & Druckman 2007: p. 104). People develop an attitude by weighing their negative and

positive evaluative beliefs of a topic on different dimensions, of which each belief has a different salience and importance. Framing can occur on purpose, but can also happen unconsciously, and in any circumstance, even in person-to-person communication. As Zaller writes: 'Changes of question wording can change people's responses even when the underlying issue remains exactly the same' (1992, p. 34).

Audiences and 'frame-creators' or messengers, people on both sides of the sending-receiving ends, have pre-existing meaning structures and schemas in their mind that influence their decisions and preferences for certain opinions and frames (Scheufele 1999, p. 105). The more a frame leans on symbols, ideologies, partisanship, endorsements (for example legal approval) and sometimes on heuristics, the stronger a frame becomes, depending on the already existing frames and ideologies of the receiving audience (Chong & Druckman 2007, p. 111). Chong and Druckman (2007) write that the effectiveness of a frame depends on 'the strength and repetition of the frame, the competitive environment and individual motivations' (p. 111). Levin et al. (2002) expounded three persuasive ways of framing: attribute framing: when a key attribute is labelled in positive rather negative terms; goal framing: when a message is framed in terms of potential losses rather than gains; and risky choice framing: giving people the option to avoid unfavourable outcomes than to achieve favourable ones (p.411).

This paper focuses particularly on the attribute framing (Levin et al. 2002) of three practices that promote self-reliance within foodscapes: permaculture, transition towns and prepping. The main question the paper asks is: while popular framings, particularly those presented through the media, seek to present these practices as distinct entities, with some being "better" or "worse", is there some frame alignment among the different practices? To answer this, I explore how different practices are popularly framed, and contrast that with frames from people actually involved in the practices, to see where frames are incongruous and where they align. The data for this paper was collected, first, through a series of in-depth interviews with key respondents (twenty three in total) who are actively engaged in self-reliant practices that involve growing food, including permaculture, transition towns and prepping in Flanders, Belgium. The interviews focused on the worldviews and perceptions of interviewees regarding the practices they are engaged in as well as other self-reliant practices. Second, through data from first page search engine<sup>1</sup> results from keyword searches for the relevant practices as well as analysis of selected search results including news articles and blog posts. The data was analysis focused on identifying the attribute framings applied to the different practices as either positive or negative. The following section (section two) will present each of the above mentioned practices, including how they are framed within the first page results on the keyword search for the practice and to how the practice is framed by individuals, based on anecdotal framings gathered from the in-depth interviews. Section three presents a brief discussion of the results as well as preliminary conclusions.

## **2. Framing self-reliant practices**

### **Permaculture**

Permaculture is a system of agricultural and social design principles centred around simulating or directly utilizing the patterns and features observed in natural ecosystems. It is intended to be a natural, sustainable and self-sufficient approach to agriculture based on twelve design principles such as use and value renewable resources/services, produce no waste, and use and value diversity. A search of the term "permaculture" provides a mix of results of articles about the practice as well as announcements of upcoming events, workshops and lectures on the practice. Permaculture is presented in a predominantly positive light with article titles from the first fifty results including: Unlocking a backyard permaculture powerhouse — keyhole gardens (The Denver Post, 21 July 2017); Saving the world one backyard at a time (The Mercury News, 27 July 2017); Permaculture offers solution to farming in extreme heat (The Green Optimistic blog, 17 July 2017); What's the Answer to a Sustainable Future? We Are (National Geographic, 18 July 2017). The article *All About Permaculture: Traditional Farming Mixed With Modern Tech to Create a Sustainable System* (The Better India, 3 August 2017) refers to permaculture as "the alternate way of living and growing that can be a possible game changer in our race towards a better future." At first glance, attributes assigned to permaculture portray it as a positive solution, sustainable, natural and a path towards better food, health, environment and a reconnection to nature.

---

<sup>1</sup> Google (News) was the search engine used for this research, set to display 50 results per page from the web (all news) over the past year.

Similarly, practitioners of permaculture see it as a holistic journey towards more sustainable lifestyles. Frank A., who runs a permaculture farm talked about it's potential to effect change when asked about people who come to his farm for workshops: "We focus on gardening. A lot of people already garden, conventionally or organic, and it's easier to go from organic or conventional to our way of gardening... it is, as I said, a mindset, and if you change your mindset from organic or conventional to permaculture and very often it also changes in your everyday life, you start thinking about the products you use in your kitchen, and how you do your cleaning, and how you use transport." Another advocate for permaculture as part of an ecologically thoughtful lifestyle started Plukrijp, a permaculture farm and community in Schriek, Belgium. He pointed out that the surge of popularity of permaculture has led to more and more people seeking out courses, "[Permaculture] has now become widely popular and in every school that is around here, there are teachers now that want to come with their class, or send their pupils here to learn permaculture. This is one of the problems here, that this place is so small and there are not enough of these places." Permaculture appears to have the frame of an aspirational practice, one that can and should be actively taught and learned. This educational attribute is corroborated by search results. Twelve out of the top fifty search results were directly tied to classes, lectures or workshops on permaculture.

### **Transition towns**

Transition towns, also known as the transition town movement, are grassroots community initiatives that seek to increase self-sufficiency and build community resilience in the face of challenges such as peak oil, climate change and the economic crisis. The Transition Network was founded by Rob Hopkins, a permaculture designer who initiated the idea for the transition movement from applying permaculture principles to the concept of peak oil. A search of the term "transition towns" provides a mixed bag of results, while many are relatively positive, transition towns are frequently referred to in conjunction with other social movements, serving as a comparison example rather than standing entirely on their own in terms of being the sole topic of an article. For instance, in *This is how people can truly take back control: from the bottom up* (The Guardian, 7 February 2017), George Monbiot writes that, "There are hundreds of examples of how this might begin, such as community shops, development trusts, food assemblies (communities buying fresh food directly from local producers), community choirs and free universities (in which people exchange knowledge and skills in social spaces). Also time banking (where neighbours give their time to give practical help and support to others), transition towns (where residents try to create more sustainable economies) ...". Furthermore, the second result on the page, *It's critical to go 'all in' on climate optimism* (GreenBiz, 11 August 2017) refers to the transition movement as "admirable but scattershot" going on to state that "the idea never really went anywhere".

This somewhat lukewarm frame pervaded the interviews as well. Several interviewees who had at one point or another been connected to a local transition group implied that nothing much came out from it, including comments such as "it was a dead end", "all talk and no action" and "everyone was just too busy to keep up with it." However, there are active transition groups, as well as people with interest in transitions who get connected through the transition network before branching off to do other organized activities such as Repair Cafés and LETS (local exchange trading system), mirroring the search result tendency of transition towns being but one of many rather than standing on its own. Much like the GreenBiz article implied, transition towns (in Flanders) are framed as a nice idea that is not entirely realised.

### **Prepping**

Preppers are individuals who are actively preparing (prepping) for emergencies that would entail a disruption in day-to-day life. These emergencies can vary in scale and nature from a local power outage, to natural disasters such as hurricanes, and globally significant events such as large-scale economic crises. Self-reliance is a core principle of prepping which is at times referred to as survivalism. A search of



the term “prepper”<sup>2</sup> returns many negatively framed attributes, with key words such as “doomsday” (mentioned sixteen times in the search results), “apocalypse” (seven mentions), among others, featuring heavily in the results. There is a clear line of relation drawn between prepping and negative events, perhaps understandably due to the very definition of the practice. Some search results include: Nuclear war and extreme prepping (Dailyleader, 11 August 2017) and After the apocalypse: Inside the Doomsday prepper's dream home (Mirror.co.uk, 1 August 2017). Nevertheless, there are a few mentions of prepping in a positive manner, including in the article For the prepper, are the police friends or foe? (WND.com, 24 July 2017) that states that “A well-equipped prepper is in the enviable position of being able to help his friends and neighbours, no matter what the future brings.”

The apocalypse-tinged frame of preppers all alone in a collapsed society is not necessarily how they all think of prepping. When asked about his opinion on self-reliance and prepping, Hades, a long time prepper started by acknowledging the image that prepping has, “We have on the one side prepping and the most of the people or the press, which is a bit sensational in certain ways, think that prepping is about having provisions and self-defence with modern things. When you say something like bush craft that is better, that's no problem. It has no negative connotations, it's a bit like boy scouts.” Hades then went on to talk about what he thought was important in prepping, “In fact we have to learn from the problems that we have encountered in the past. And prepping and bush craft is also a way of adapting yourself to problems for the future, but that occurred also in the past. It's about learning how to adapt yourself to another situation ... When you can have your own vegetables, you learn from it and it's also a good thing. You have done it yourself, you didn't have to go to the shop to buy it, you can see it growing every day. And you can learn also more about the seasons, the weather, the influence of all that. And in our modern society here in Belgium, or Europe, I think that we have lost this connection with Earth.” He pointed out that it was not an individualist or uncommon endeavour as generally thought, “Even if you learn a little bit of the skill of your neighbour, of your friend, it can help you and can help the group. So, in fact, I would say, prepping and bush craft is something for everyone, and in fact everyone does it without knowing it.” Jerry, another lifelong prepper agreed that prepping was not just for individuals, he said “[Preppers] are out there practicing so they will be able to help the community. Preppers are not just for themselves.”

### **Distinct or aligned?**

Permaculture, transition towns and prepping each present a distinct first impression when searched about online or spoken about during interviews. However, how distinct are they in practice? Transition towns, while not entirely the same as permaculture, actually grew from permaculture and were founded by a permaculture designer. All of the interviewees who practiced permaculture had at some point been aware of, communicated with or engaged in a local transition town movement. While many of these connections were currently dormant or had fallen out of interest for the interviewees, the transition town network was, nevertheless, a point of knowledge-sharing in common with permaculture networks. Additionally, the values and motivations expressed by individuals engaged in both were quite similar including: concern for the environment, reconnection with nature and self-sufficiency away from conventional systems, and local, healthy and sustainable food production. In spite of this common ground, permaculture still enjoys a frame of success, strength and continuity not shared by transition towns in Flanders. Prepping, while sharing similar values and motivations with permaculture and transition towns, had the most negative framing of the three. This negative framing can be seen as a barrier to recognizing where frames may align. For instance, Hugo, a transition towns organizer believes that many preppers are “too dependent on technical tools” rather than on developing independent skills, an opinion almost exactly mirrored by Hades who thought that it was “more about skills” than reliance on modern tools.

The attribute framing of these practices, as positive or negative, was justified based on information received either from the internet or personal experiences. Though there were alignments between all

---

<sup>2</sup> The term prepper was chosen for the search instead of prepping (which also brings results related to a general preparing for anything) to focus more specifically on the practice in question.

three practices prepping was the only practice with overall negatively perceived attributes from non-preppers, at times referred to as “freakish” or “extreme”. Interestingly, among interviewees engaged in permaculture and prepping there was a tendency to distinguish the many different ways in which the practice could be carried out, at times separating the practices into sub-groups. In terms of attribute framing, this delineation acted as a way to show that even within the in-group that, in addition to “better” or “worse” practices, there are also “better” or “worse” ways to engage in the same practices. This extra layer of framing is not explicitly visible in search results. Whilst permaculture, transition towns and prepping share some common ground in terms of shared values, motivations and goals, their contrasting popular framings may well remain irreconcilable. Using popular framings as the sole basis for understanding these practices would belie the more complex connections between these practices and their roles within contemporary foodscapes.

## References

- Chong, D. & J. N. Druckman (2007) Framing Theory. *Annual Review Political Science*. 10: p. 103-126.
- D’Angelo, P. & J.A. Kuypers (ed.) (2010) *Doing News Framing Analysis: Empirical and Theoretical Perspectives*. Routledge, Taylor and Francis, New York and London.
- Denzin, N.K. & C.M. Keller (1981) Frame Analysis Reconsidered. *Contemporary Sociology*, Vol. 10, Issue 1, p. 52-60.
- Iyer, U. (2017). All About Permaculture: Traditional Farming Mixed With Modern Tech to Create a Sustainable System. *The Better India*. 3 August 2017. Available on: <http://www.thebetterindia.com/109993/permaculture-agriculture-self-sustainable-inclusive-tomorrow/>
- Levin, P.I. , G.J. Gaeth, J. Schreiber, M. Lauriola (2002) A New Look at Framing Effects: Distribution of Effect Sizes, Individual Differences, and Independence of Types of Effects. *Organizational Behavior and Human Decision Processes*. Vol. 88: Issue 1, p. 411-429. Retrieved from: <https://pdfs.semanticscholar.org/b4e2/bdbbb8e30e3354d5547e96fea12769c1946c.pdf>
- Monbiot, G. (2017). This is how people can truly take back control: from the bottom up. *The Guardian*. 8 February 2017. Available on: <https://www.theguardian.com/commentisfree/2017/feb/08/take-back-control-bottom-up-communities>
- Murray, J. (2017). It's critical to go 'all in' on climate optimism. *Business Green*. 11 August 2017. Available on: <https://www.greenbiz.com/article/its-critical-go-all-climate-optimism>
- Scheufele, D.A. (1999) Framing As a Theory of Media Effects. *Journal of Communication*. Winter 1999, p. 103-122.
- The Practical Prepper (2017). For the prepper: are police friends or foe? *WND.com*. 24 July 2017. Available on: <http://www.wnd.com/2017/07/for-the-prepper-are-the-police-friends-or-foe/>
- Zaller, J.R. (1992) *The Nature and Origins of Mass Opinion*. Cambridge University Press, Cambridge, New York. Retrieved from: <http://isites.harvard.edu/fs/docs/icb.topic1507053.files/Zaller%20Nature%20and%20Origins%20of%20Mass%20Opinion%20ch%201-2.pdf>

# Redesigning food systems for economic, social, and ecological benefit in Chiapas, Mexico

Emilio Travieso

Department of International Development, University of Oxford

Email: emilio.travieso@qeh.ox.ac.uk

**Keywords:** food sovereignty; social and solidarity economy; agroecology; transformative social innovation; Chiapas, Mexico

## Introduction: in search of “resourcefulness”

The currently dominant food system, based on an industrial model of production and a market model of distribution, has failed to feed the world’s growing population, despite producing more than enough food (FAO et al 2015; De Schutter 2014). At the same time, it has created new social, environmental and health-related problems (Pimbert 2009; De Schutter 2014; Isakson 2014; Ploeg 2010; McIntyre et al 2009; Hoffman 2013). As a result, more and more policymakers – including the fifty-eight national governments that signed the landmark IAASTD report in 2009 – are realizing that “business as usual is no longer an option” (McIntyre et al 2009), and lending greater support to innovative food system designs, such as those that prioritize the role of small farmers and agroecological modes of production (cf McIntyre et al 2009; De Schutter 2010; Altieri and Toledo 2011).

The challenge of building more sustainable, just and healthy food systems, at its core, requires a paradigm shift in our economic model. Indeed, among the most promising experiments are those that combine agroecology with social and solidarity economy. By re-embedding food systems in our relationships with nature and with each other, these models set in motion dynamics of “resourcefulness” (cf MacKinnon and Derickson 2012).

This paper, based on seven months of ethnographic fieldwork and ongoing participatory action research, tells the story – and considers the implications – of one such initiative. The Misión de Bachajón (MB) constitutes the local Catholic Church in a 3,000-km<sup>2</sup> area of the northern Selva (Jungle) region of Chiapas, which is Mexico’s southernmost state. Founded in 1958 as a Jesuit mission to the indigenous Mayan Tseltal people, the MB has grown into an “autochthonous church,” organized according to the indigenous cargo system of self-government, with hundreds of Tseltal clergy and thousands of Tseltal lay ministers (Zatyrka 2003; Crispín Bernardo and Ruiz Muñoz 2010). As part of the liberation theology movement, the MB has played a key role in the region’s social justice struggles over the last several decades.

Upon regaining ancestral Tseltal lands from settler plantation owners in the 1990s (Bobrow-Strain 2007), the MB recognized the opportunity, and the need, to “reboot” the entire food system (cf Borrás et al 2015). The struggle for food sovereignty is indissociable from a wider effort to build full sovereignty for the Tseltal people, encompassing cultural, political, and economic dimensions, among others. To make this project viable, the MB has designed a sophisticated post-capitalist model in which two distinct economic realms are first separated and then articulated.

## *Restoring economy’s tension*

When we think of the economy, we tend to think in terms of money.<sup>3</sup> However, if we look at the economy as everything that sustains and mediates the reproduction of life, we get a much wider picture. Economic anthropologist Stephen Gudeman (2008) has developed a model that accounts for economy in this sense.

For Gudeman, every human economy consists of two fundamental spheres, market and community. The market is that sphere in which we interact as individual rational choosers exchanging goods and services. The community, in contrast, is the sphere of relationships where we share what we have, with a logic of solidarity. The community is founded on a common “base,” made up of those material and symbolic things that are not for sale, because they guarantee the identity and survival of the community in the very long run, beyond individual life spans. As such, the base has stewards, but no owners.

---

<sup>3</sup> This section and the next include some paragraphs that are translated and adapted from my own work in a Spanish-language publication (Travieso 2016). The translation is used here with permission.

People are their “disjoint selves” when they are in the market, and their “conjoint selves” when they are in community. In other words, we think and act differently according to the sphere in which we see ourselves acting. Parry and Bloch (1989), who propose a similar model, add that market interactions tend to be short-term, while community relationships tend to be long-term.

The two spheres are connected, because they need each other. The market cannot function if there is no trust; this trust is built in the community. At the same time, the community goes to market to obtain what it needs for maintaining or renewing its base.

On the other hand, each sphere has its own dynamism, and the contradiction between the logic of the market and the logic of community creates a tension. The tendency in globalized modernity is for the unrestricted capitalist market to “cascade” into the community sphere and its base, turning everything into merchandise. The danger with this is that when community relations are disembedded from their logic of solidarity and trust, and the base is treated as a commodity to be sold to the highest bidder, the whole economy becomes unsustainable. The market is not capable of providing the conditions for its own possibility (this is done by the community and its base); when it disintegrates the foundation on which it rests, the market destabilizes itself.

This is precisely the crisis we are facing; capitalism has degraded both the social cohesion and the ecological conditions that allow us to live together in our common home. The question, then, is how to recover the balance in our economy, before it is too late. Concretely, this means restoring the creative tension between the market sphere, with its logic of maximizing short-term benefit, and the community sphere, where persons (and the collective) are ends in themselves; at stake is the base that sustains our life.

### *Alternatives*

If the unbridled market is like a wild animal – a lion, for example – that invades a village and eats the people, then the people have three options to defend their community (Travieso 2016). The most obvious one would be to kill the lion. This has been the strategy of communist experiments, which have tried to build economies with no market. History has taught us that this option is not very viable.

The second possibility is to build a fence. That is, to demarcate a protected area, where the market is not allowed to enter. This is the strategy of solidarity economy, which tries to generate a space for economic life that is not mediated by money (except perhaps a strictly local currency). Solidarity economy emphasizes reciprocal practices, like barter, and generous ones, like voluntary service. The risk with this strategy is that when people build a fence to keep the lion out, they also lock themselves in, isolating themselves. This is why these initiatives tend to be small and fragile.

The third possibility is to tame the lion, and even domesticate it – using its strength for the ends of the community. In other words, to place the market at the service of the people, rather than the service of capital accumulation. This is the logic of social economy, whose typical expression is the “social business.” These function with the efficiency of a capitalist enterprise, but their principal mission is to create a social good. The risk with this strategy is that it requires getting very close to the lion, and sometimes lions end up eating the people who would tame them. In other words, social economy by itself can become a Trojan horse that allows the market to sneak even further into the sphere of community, displacing other bodies like civil society and the state.

Gudeman’s model, and the allegory of the lion, allow us to understand what is at stake in the repertoire of options available to those communities, such as the Tseltal, who aim to restore themselves to a position of strength vis-à-vis the globalized capitalist market. They will also allow us to appreciate the genius in the way that the MB has approached this challenge. To restore the health of its region’s economy, and with it the possibility of a shared, sustainable life, the MB has creatively articulated two complementary strategies.

### *Protecting the base*

On the one hand, the MB protects its “base” – that which is essential for the community’s reproduction – by withdrawing it from the sphere of market commodification. After helping to achieve the massive agrarian reform of the 1990s, the MB promptly ensured its legal status in the form of social property, according to the Mexican ejido system: each family is allotted a few hectares, but the land is owned

collectively. By drawing up ejido statutes that prohibit privatization and mobilizing support for elected leaders who will defend this principle, the MB actively resists the threat of neoliberal policies aimed at turning the land into a currency of exchange. Similarly, the MB helps to coordinate a state-wide indigenous movement that assertively rejects any extractivist or infrastructure mega-projects on sacred territory replete with natural resources and biodiversity.

The non-material aspects of the base, such as Tseltal language and culture, are just as important. The MB takes pains to revitalize these, along with the cargo system mentioned above, in which nearly every adult in a community is entrusted with a specific responsibility, ranging from religious ministry to traditional healthcare to conflict mediation. This form of work, which provides essential services and reproduces social cohesion, is paid only with social recognition, but never with money.

Food is at the nexus of all of these elements. Tseltal culture is largely built around the practice of milpa, a Mesoamerican polyculture of maize, beans, and squash combined with a plethora of other beneficial plant, animal, and fungal species that coexist with these crops. Effectively all Tseltal peasant families use the greater part of their land to make milpa, and they produce nearly everything they eat (except for salt, sugar, and oil, as far as staples).

This degree of food sovereignty goes beyond ensuring nutrition; it entails the reproduction of knowledge, practices, vocabulary, and an entire worldview that all hinge on an intimate relationship with the local environment, and allow for the expression of identity through special recipes whose ingredients are unavailable in the market. Food also mediates human relationships of family, hospitality, solidarity, and celebration. Indeed, the deeper political implications of food sovereignty have not been lost on indigenous scholars elsewhere (cf eg Daigle 2017).

Because of the centrality of food sovereignty to wider Tseltal sovereignty, the MB has established the role of “caretakers of Mother Earth” (kanal lum k’inaj). Those with this cargo teach their communities agroecological ways of enhancing soil fertility and controlling insects by managing biodiversity. They also emphasize the importance of using naturally “open-source” seeds as a way of resisting the commodification of their food.

Meanwhile, Tseltal peasant livelihoods also depend on cash, and the principal source of income for most families is the annual coffee harvest. Coffee is consumed as a staple, but it has little nutritional value and was introduced to Chiapas by German settlers only a few generations ago; it is not in any way essential to the material or symbolic “base” of Tseltal society. Thus, it does not need to be fenced off from the market. Whereas the MB’s food sovereignty strategy revolves around milpa, coffee (and to a lesser degree, honey) is the food product through which the MB implements a separate strategy of sovereign engagement with the outside market.

### *Taming the market*

Smallholders in Chiapas are the force behind Mexico’s ranking among the top coffee-producing countries worldwide. However, the municipalities where the MB is located, which are among the most productive in the state, experience extremely high rates of multidimensional poverty relative to the rest of the country. Indigenous households in particular are disproportionately represented among the producers and among the poor.

The MB interprets this paradox through the lens of power. Coffee is the tropical commodity par excellence, not only because it is the most traded, but also because it exemplifies unequal relationships in global value chains. Small producers in Chiapas typically sell parchment coffee to traders as a commodity, to be roasted and brewed by third parties – mainly a small group of multinational firms – who keep the lion’s share of the final price (cf Daviron and Ponte 2005; Irezabal Vilaclara 2016). Financial speculation in the commodities market leaves producers vulnerable to price volatility, which is driven by factors outside their control, and the fact that they are typically paid by weight takes away the opportunity to optimize value by investing in quality.

In this context, the MB eschews popular development strategies that rely solely on the conscience of consumers (such as “fair trade” schemes), setting out instead to overcome exploitation at a structural level and restore right relationships by engaging trade from a position of strength (Irezabal and Travieso

forthcoming). “Taming” the market in this sense entails a manifold strategy of economic upgrading, focused primarily on forward vertical integration. YA’ has built its own coffee roasting plant in Chiapas, and a chain of its own brand of coffee shops located in wealthy urban parts of Mexico. Controlling the entire value chain in this way not only creates higher returns, but also circumvents the price volatility of the commodities market.

Implementing this successful business strategy is necessary but not sufficient to achieve the MB’s goals. The whole point is to improve conditions for the people at the bottom, and economic upgrading does not necessarily do this on its own (Barrientos et al 2011). Thus, the MB must not only “tame” the market, but also “domesticate” it.

#### *Domesticating the market*

YA’s business model places the market’s force at the service of the community and its base, by design. Producers earn better and more stable prices for their coffee. Since they are organized as a cooperative, they distribute income equitably and make decisions together. Profits are reinvested in the form of social property through the cooperative’s microfinance bank, which makes loans for diversification of production, as well as for personal needs. The roasting plant, microfinance bank, and other related activities create new technical and administrative jobs for youth from producer families. As a matter of MB and YA’ policy, women have equal access to these high-value and non-traditional jobs. A cross-cutting educational component, ranging from on-site training to sponsorship of professional university degrees and diplomas, ensures that all members grow in capabilities.

The YA’ design contributes to social cohesion both indirectly, by improving economic conditions for individuals (thereby enabling their unpaid community service through the cargo system), and directly, by reducing inequality and sharing power democratically. Further, the creation of non-agricultural jobs with increasing marginal returns on investment, which still depend on intensive agricultural production (where value productivity is based on quality and scope rather than spatial extension), is a way of fostering sustainable rural livelihoods in a context of increasing population density.

Besides articulating the benefits from market engagement with the needs of the community, the YA’ design also nourishes the ecological dimension of the community’s collective base through market-oriented activity. By incentivizing quality over volume, YA’ encourages producers to continue growing coffee organically in shade forests. As with traditional multi-cropping (which it complements in terms of required knowledge, skills, and work distribution), this style of production provides “cultural services to ecosystems” (Comberty et al 2015; Perfecto and Vandermeer 2009). Given that the long-term production of both milpa and coffee depends on ecosystem services, this mutuality creates a virtuous circle of the MB’s overall food system design.

#### *Translation, “reverse cascading,” and harmonization*

The spheres of market, community and base complement each other in the MB’s post-capitalist economy. The complementarity is based on a dynamic of positive feedback loops that transfer value between spheres, creating new value in the process. This dynamic is far from automatic; it requires the work of translation. In contrast to exploitative “salvage capitalism” (Tsing 2015), the YA’ design translates value ethically, aiming for cross-sphere mutuality.

Furthermore, YA’ has achieved its model through “reverse cascading.” If today the cooperative provides a better price to producers (in the market realm) partly in order to enable their volunteer work as cargos (in the community realm), the mechanism for obtaining this higher price (forward vertical integration, etc.) itself is the result of many years of investment in which many people living in multidimensional poverty had to work even harder than usual, often at a loss. Since the coffee trade fits squarely in the market sphere, people tend to act in it through their “disjoint” identity, as rational choosers; in this mentality, nobody in their right mind would take the sort of risks that were necessary to get YA’ up and running. But YA’ was able to find people willing to make this personal sacrifice for the sake of the long-term common good precisely by recruiting initial cooperative members from among the cargos: it appealed to their public “conjoint” identity, mobilizing its logic of community solidarity within the sphere of the market.

Keeping the creative tension alive also requires the work of harmonization, not least between the different rhythms of community, market, and nature. YA's techniques, knowledges and ethics of time intersect to provide a robust alternative to capitalist time (cf Bear 2017).

### *Conclusion: implications of the model*

The MB's creative articulation of both solidarity economy and social economy strategies allows it to overcome the risks of each (isolation and inadvertent commodification, respectively), while generating positive feedback loops between economic upgrading, social benefit, and ecological enhancement. At the same time that the model is designed to foster Tseltal "resourcefulness," it also contributes to Mexican food sovereignty (by supplying domestically roasted coffee) and to worldwide food security (through the protection of maize biodiversity and other ecosystem services). While fundamentally rural and deeply rooted in a particular culture, the logic and implications of the MB's economic design can contribute to the search for new possibilities in sustainable food planning more broadly. Indeed, researchers are increasingly taking note of its potential, and some aspects of the MB model are already being replicated throughout Latin America.

### **References**

- Altieri, Miguel and Victor Toledo (2011) "The agroecological revolution in Latin America: rescuing nature, ensuring food sovereignty and empowering peasants," *Journal of Peasant Studies* 38(3): 587-612.
- Barrientos, Stephanie; Gereffi, Gary; Rossi, Arianna (2011) "Economic and social upgrading in global production networks: A new paradigm for a changing world." *International Labour Review* 150(3-4): 319-340.
- Bear, Laura (2017) "Anthropological Futures: A Critical Political Economy of Capitalist Time." *Social Anthropology* 25(2):142-158.
- Bobrow-Strain, Aaron (2007) *Intimate Enemies. Landowners, power and violence in Chiapas*. London: Duke UP.
- Borras, Saturnino M. Jr.; Franco, Jennifer C.; Monsalve Suárez, Sofia (2015) "Land and food sovereignty". *Third World Quarterly* 36(3): 600-617.
- Combetti, Claudia; Thornton, T.F.; Wylliede Echeverria, V.; and Patterson, T. (2015) "Ecosystem services or services to ecosystems? Valuing cultivation and reciprocal relationships between humans and ecosystems" *Global Environmental Change* 34: 247-262.
- Crispín Bernardo, María Luisa y María Mercedes Ruiz Muñoz (2010) *Huellas de un caminar. La Misión jesuita de Bachajón*. México: Universidad Iberoamericana.
- Daigle, Michelle (2017) "Tracing the terrain of Indigenous food sovereignties." *Journal of Peasant Studies* 44(4).
- Daviron, Benoit y Ponte, Stefano (2005) *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development*. London: Zed.
- MacKinnon, Danny and Derickson, Kate Driscoll (2012) "From resilience to resourcefulness: A critique of resilience policy and activism" *Progress in Human Geography* 37(2): 253-270.
- De Schutter, Olivier (2014) "The Specter of Productivism and Food Democracy" *Wisconsin Law Review* 2014(2): 199-233.
- De Schutter, Olivier (2010) Report submitted by the Special Rapporteur on the right to food. UN General Assembly. A/HRC/16/49.
- FAO, IFAD and WFP (2015) *The State of Food Insecurity in the World 2015. Meeting the 2015 international hunger targets: taking stock of uneven progress*. Rome, FAO.
- Gudeman, Stephen (2008) *Economy's Tension. The Dialectics of Community and Market*. Oxford: Berghahn.
- Hoffman, Ulrich (2013) "Agriculture at a crossroads: Assuring food security in developing countries under the challenges of global warming." pp 2-8 in UNCTAD. *Trade and Environment Review 2013. Wake Up Before It Is Too Late*. United Nations.
- Irezabal Vilaclara, Alberto (2016) "La empresa social y solidaria para la defensa del territorio: Una experiencia en Chiapas, Mexico." *Revista Bilduma*.
- Irezabal, Alberto and Travieso, Emilio (forthcoming) "Domesticating the market: A case study from the coffee value chain in Chiapas, Mexico."
- Isakson, S Ryan (2014) "Maize Diversity and the Political Economy of Agrarian Restructuring in Guatemala". *Journal of Agrarian Change* 14(3): 347-379.

McIntyre, Beverly, and Hans Herren, Judi Wakhungu, Robert Watson (eds) (2009) *Agriculture at a Crossroads*. Synthesis Report. Washington: IAASTD.

Parry, Jonathan and Maurice Bloch (1989) "Introduction: Money and the Morality of Exchange" pp 1-32 in their (eds) *Money and the Morality of Exchange*. Cambridge: Cambridge UP.

Perfecto, Ivette, and John Vandermeer, Angus Wright (2009). *Nature's Matrix: Linking Agriculture, Conservation and Food Sovereignty*. London: Earthscan.

Pimbert, Michel (2009) "Transforming Knowledge and Ways of Knowing." Chap. 7 in *Towards Food Sovereignty: Reclaiming Autonomous Food Systems*. London: IIED, 2009.

Ploeg, Jan Douwe van der (2010) "The Food Crisis, Industrialized Farming and the Imperial Regime". *Journal of Agrarian Change* 10(1): 98-106.

Travieso, Emilio (2016) "Creatividad ante la crisis: alternativas desde América Latina." *Ibero* 8(45): 36-38.

Tsing, Anna L. (2015) *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton UP.

Zatyrka, Alex (2003). *The Formation of the Autochthonous Church and the Inculturation of Christian Ministries in the Indian Cultures of America, a Case Study: The Bachajón Mission and the Diocese of San Cristóbal de las Casas, Mexico*. Doctoral dissertation in Theology (Leopold Franzens Universität, Innsbruck, Austria).

---



## A food perspective on urban green space

Noel Van Dooren

Van Hall Larenstein Velp, Netherlands

---

**Keywords:** food system; regional; design; commons; fruit; city

---

Future regional food systems will have to build upon several strategies to realise a substantial larger share of indeed regional production. The professorship Sustainable Foodscapes in Urban Regions translates this as 'from 5 to 50'. Although a gross simplification, this summarizes the transition of a current situation in which, estimated, about 5% of food is produced regionally nowadays towards a future scenario that this will be 50% towards 2050. The assumption that 5% is produced regionally today is a rough claim, very dependent on definitions, but in the Netherlands roughly accepted amongst specialists, and it serves mainly to mark the enormous gap with this future perspective of 50%. Even if 50% again is a number that is debatable, it underlines the serious attempt to produce a substantial part of our food regionally. Even if this comes with obstacles, such as the need to reform the logistic system to have food arriving at our plates, from the perspective of a circular economy and the need to reduce food kilometres we simply have to act. That doesn't happen only by producing regionally, but the support for this strategy certainly grows. The Netherlands, with their very strong position in food worldwide, can easily feed itself, but following a global market system both exports and imports enormous amounts of food. One of the inspirations for a different approach is Carolyn Steel's *The Hungry City*, especially as it connects the food system to the way our cities are structured, implying that innovations in our food system and in city planning may help each other. Future regional food systems will certainly need the engagement of more traditional agricultural practices, transformed towards a more sustainable character, and this will have to be combined with innovative practices such as urban agriculture. Apart from that, in recent years a do-it-yourself practice of collecting food –wildcrafting– emerged, or revived. In the Netherlands we observe a growing interest in local food production, including vegetable gardens, orchards and urban agriculture enterprises (PBL, 2014). One motive for joining such initiatives is the improved taste of food - even if we know that this may mainly be the idea, and not a physical reality. Even if collecting and growing food in forests and in cities in quantitative terms is negligible, its educational influence is substantial, just as is its empowering effect on consumers. It is the combination of such strategies together with high tech agriculture indoor that may be capable of providing 50% of our urban needs in the coming decades.

In our *Vruchtgebruik* project (the name being a Dutch term for both usufruct and the actual profit from fruit harvest) we research a relatively blank spot within the discourse on regional food systems, which addresses a substantial reservoir: the potential role of fruit harvest in public green space. Dutch cities have a strong tradition of designed green space. Such spaces are assigned all sorts of 'tasks': very concrete tasks are providing facilities for leisure and sport, and to be of ecological value. Even if allotment gardens are often considered a category of public green space, as an area for food production urban green space up until now hardly had a role. Typically the trees and shrubs as planted are chosen for their aesthetic and ecological value, or their efficient management, but not for eatable nuts, berries and fruit. Nevertheless, we do find edible goods in public space today, as also addressed by bottom up initiatives such as the Fallen Fruit movement in the USA, or Mundraub.org in Germany. In the Netherlands nationwide platforms like [plukdestad.nl](http://plukdestad.nl) or [wildplukwijzer.nl](http://wildplukwijzer.nl) guide people to harvesting fruit and (wild) plants in cities. Promoting a different position of green space in the debate on local food starts by investigating ways to intensify the use of existing fruit as present in public space, but quickly moves on towards looking at public green space as what is in fact an agroforestry area, expected to deliver a substantial food production, defined in terms of fruit, nuts and berries. 'Agroforestry' here refers to a system of agriculture that rests on smart combinations of trees, shrubs, perennials and annuals that are capable of a sustainable production with minimal input of external nutrients, and no waste of material. Being applied in tropical countries, there is a recent interest of the meaning of such an approach for our Western food system. Agroforestry being an accepted concept, many other words are used for 'nearby' concepts. 'Voedselbos' or food forest is an example of this, just as 'nature inclusive agriculture' is. By no

means we want a semantic discussion here but it is good to know that we prefer to speak about agroforestry as the larger denomination.

Together with 6 Dutch local administrations, this action research project documents existing capacity, designs new productivity, and studies successful organisation strategies that contribute to sustainable management and harvest. In terms of theory this is an explorative project. It makes use of existing theory from very different fields, ranging from agronomy to design to ecology to jurisdiction to sociology. Specific examples are writings on the (il)legal collection of existing fruit in derelict areas in the United States, as given by Fallen Fruit (see <http://fallenfruit.org/projects/>), or on the organization of public versus private or commercial use, as in writings on new ways of defining commons. The actual idea however of producing fruit in urban green space is hardly covered, or at least not in the way we want to do here.

### **Multiple goals**

In itself, public green areas in cities perform many important tasks, and producing food will not be the priority for many. In the Vruchtgebruik project we depart from the assumption that feeding ourselves from the region (our 50% maxim) may and even will necessitate an involvement of public green space, and secondly, that such a task by no means excludes other meanings or tasks – on the contrary, strong concepts for fruit production in the city typically combine attention for bees, for education –think of children, fruit, baking and eating- for participation of and connections between different social groups and so on.

It is important to see that such a new type of food production is not a goal in itself. It fits in larger political and social agendas, for example related to climate, to independency (for states, cities and individuals), to ecology and to a circular economy, to mention some. Most of the cities we work with explicitly adopt one or more of these agendas. For example, the city of Leeuwarden conducts a policy for food autonomy, whereas the city of Culemborg stresses the involvement of schools and children, next to an agenda to support bee life - to mention two of the participating cities. That expresses itself in an interest on the higher political level (as it could comply with the agenda of the alderman responsible for the environment) and at the same time of civil servants responsible for very different aspects of this – think of the management of fruit trees and transferring such management to civilians.

One of the questions we work on in the project is an attempt to quantify the current production. As practical as it seems this is a difficult one, leading to all sorts of definition problems. What exactly do we define as edible, within the shrubs and trees currently in use? And what exactly do we define as production, when only small amounts of the fruit as produced indeed is collected? What do we know anyhow on the city level about the presence of trees and shrubs delivering edible goods, versus trees and shrubs in general? Obviously, trying to quantify goes hand in hand with exploring a reliable method to do so in the future. In next steps we want to explore the use of GIS and field observation for existing areas, but what we certainly need is a comparable way of measuring the potential outcome of transformed public green area. In doing so, we have to take into account that any newly planted fruit tree will take years to start producing. Knowledge of horticultural and agricultural aspects of growing fruit and estimating produce will be integrated, but often has to be adapted to suboptimal circumstances - varying from non-sufficient soil quality to a lack of insight in efficient harvest techniques.

### **The commons**

In theoretical terms, this project reflects on the notion of the common. This term refers to a resource of land or good shared by many individuals. Commons do not have one specific owner exerting authority. The lack of rules and lagged environmental effects can lead to what Hardin (1968) called the tragedy of the commons: overexploitation by maximizing individual benefits. Individual profit maximisation however is not the only motivation for people to act (Achterhuis, 2010). The shared use of commons is also seen as a guarantee for commitment and sustainable use. Assigning propriety rights or use rights (E. Ostrom) is seen as a way to make commons work in current society. But how to ensure that no one else harvests from the orchard or harms the trees in any way? Related to green public space, one question is than to design green public space in such a way that 'good use' is invited, and 'bad use' does not happen too often. Obviously, looking at public space as a common poses difficult questions, as citizens are not

the owners, nor fully responsible for it. However, looking at several notions of successfully managed commons make us think that the common is an interesting reference in this context. Further discussion should investigate what it means to look at commons in the context of public green as communal property (Feeny et al 1990). Here again design can be valuable to find attractive spatial and practical solutions for inviting participation, and promoting care.

As the professorship Sustainable Foodscapes in Urban Regions is connected to a curriculum for garden and landscape architecture, design is seen as a method for research, and this project introduces challenging new questions. Ironically, cultivating, growing food and eating are essential aspects of landscape, and more particularly of the man made landscape, but the discipline of garden and landscape architecture does not address this as a design problem - or at least, started to do so only relatively recently. Professionals and students are confronted with enticing but difficult questions related to the technique of growing and harvesting fruit, but certainly also how to apply this in public space. For example: to what extent producing food in public space comes with privatization of space, or is it the other way around: expanded fruit production invites more people into public green space? Recent investigations, for example by the neighbouring professorship of Derk Jan Stobbelaar, point at the fact that the government tends to retreat itself from actively contributing to such new ideas in terms of money, management and responsibility. As the government at the same time may be positive about it from more general political agendas, bottom up powers of individual and grouped civilians are sought for. What sustainable organizational models can such new collectives adopt to ensure that the orchard is not only nice for one year, but becomes to be a steady element of communal life and public green? An important part of this project is to research how existing local initiatives successfully organize themselves in a lasting way, and to look for strategies to involve many more citizens into the production of food in urban green space. Some cities assume that perhaps also traditional practices of agriculture –commercial fruit growers- should play a role in this. Not only do they have knowledge, machinery and a business model, there is also an economical legitimation: if food production grows substantially, it will become of economical interest. We already speak with commercial parties that state that if citizens are 'allowed' to grow fruit, they should be able to participate too, and profit of this new production reservoir. In the cities of Arnhem and Hoorn this explicitly is a research question brought into the project.

In the end the production of food is about harvesting, collecting, storing, refining, cooking, eating. That implies on an urban level the promise of shared pleasure. We study examples worldwide of celebrating harvest, and the social importance of this. For some of the participating cities this perhaps is the main motivation: the idea that in our current society, with tensions and gaps between groups, every action or happening that may help to connect people is valuable. Harvesting and eating certainly has this potential.

#### *Student project Culemborg*

The Vruchtgebruik project connects professionals, citizens, tutors, students and researchers. It stages projects with students to reflect on certain questions, and to bring the outcome into discussion. One example is the final project for students of garden and landscape architecture, addressing the inner city of Culemborg. This and other student projects learn that the theme is difficult to handle, as it is far out the comfort zone of young landscape designers. Nevertheless, their contribution includes ideas and concepts that deserve further attention. We give three examples:

- Robbert Jan designs a new pathway that is dedicated to fruit, both as a site for production and as a means to raise awareness for fruit and the production of food. Where most students stay away from an answer to quantitative questions (how much does your design deliver?) Robert Jan estimates the produce. He connects this to a former industry complex, now transforming towards a hot spot with a restaurant, suggesting that such a place should have a role in trading and enjoying.
- Lesley, in between many other ideas, contemplates the involvement of citizens and proposes an adoption plan for fruit trees, implying that both the care and the harvest is connected to certain persons. This could solve practical questions, but the deeper meaning of course is the bottom up support. At the same time unanswered questions remain, as indicated in speaking about the commons: profit for one might exclude others. How does that work in public space? Lesley takes the optimistic side: at least more citizens are involved.

- Emilie assumes that a strong role for fruit could help to draw a new image of Culemborg, and a means to differentiate neighborhoods and routes. Technical aspects of planting fruit trees are in some of the student projects rather absent. Emilie studied distances, exposition and management, acknowledging that this is an important condition for successful solutions.

Two other projects in the cities of Wageningen and Culemborg did not aim to explore design solutions, but to study social organization. In Culemborg students discovered that civilians already knew more about the local orchard in their neighbourhood than civil servants had expected - for local governments an important question is in how far groups of civilians can be trusted and made responsible. In Wageningen, it turned out that locals do have concrete ideas about how to use green public space, including food production. What they need is to be facilitated in reaching the municipality, for permission and support, and more in particular the know-how on design and management of green public spaces.

The project Vruchtgebruik proposes a fundamental new perception of public green space, in which all current values and expectations are to be continued, but a new 'task' must be integrated: food production. The project will run until 2018. This paper is written as a means to bring background concepts, theory and intermediate results in discussion, both in the international arena and in the participating municipalities, also as a means of setting the agenda for the second half of the project. In the next phase of the project we aim to:

- describe a method for 'measuring' existing productive qualities of green urban space;
- describe successful examples of bottom up orchard management, and translate this into strategies for successful long term management of productive green space by (groups of) citizens;
- organize a meeting for cities to discuss the role of fruit production in green space as part of larger political agendas;
- look for specific design solutions addressing the tension between private, group and public interest, and by that contribute to a theory of commons.

## References

- Achterhuis, H (2010) De utopie van de vrije markt Lemniscaat, pp. 123-130.
- Basurto, X., Ostrom, E. (2009) beyond the tragedy of the commons.
- Heinberg, R. and Bomford, M. (2009) The Food and Farming Transition: Toward a Post Carbon Food System Santa Rosa: Post Carbon Institute
- Feeny, D., Berkes, F., McCay, B.J. et al. Hum Ecol (1990) 18: 1. doi:10.1007/BF00889070, 'The Tragedy of the Commons: Twenty-two years later'.
- Simon Franken, 'Maak de publieke ruimte wat meer privaat' in Sociale Vraagstukken (april 2013)
- Bomenstichting Inventarisatie buurtboomgaarden, 2011.
- Darrin Nordahl (2014) Public produce. Cultivating our parks, plazas and streets for healthier cities Washinton DC: Island Press.
- Bonnie Bartlett (2012) 'Revealing the hidden harvest. Prospects and challenges for urban fruit trees projects' In: Current Issues Papers.
- Hardin G (1968) 'Tragedy of the Commons' in Science, New Series, Vol. 162, No. 3859, pp. 1243-1248
- Mundraub.org (2012) 'Sharing our common fruit' in: David Bolletier (Ed.) The Wealth of the commons. A world beyond market and state Amherst, Levellers Press
- Napoli, Lisa-Marie (2015) "Public Deliberation as a Tool for Managing the Commons: A Case Study of the Bloomington Community Orchard," Journal of Public Deliberation: Vol. 11 : Iss. 2 , Article 8.
- PBL (2014) Nederlanders en duurzaam voedsel Enquête over motieven voor verduurzaming van het voedselsysteem en consumptiegedrag, PBL Den Haag/Bilthoven
- Steel, C. (2009) Hungry city. How Food shapes our Lives Random House

## The emerging practice of food forest – a promise for a sustainable urban food system?

Noel Van Dooren

Van Hall Larenstein Velp, Netherlands

---

**Keywords:** food system; regional; design; agroforestry; city

---

In the Netherlands, a growing number of initiatives can be noted that address themselves as 'voedselbos' or food forest, partly building upon international examples and experience, as for example provided by Hart, Crawford and Shepard. Most of the newly planned or realized initiatives in the Netherlands measure about 0,5 to 5 hectares, with Van Eck's Ketelbroek as a leading example. Food forest as a conceptual idea combines trees, shrubs, perennials and annuals in a variety much larger than in common agriculture. Often a link is seen with permaculture. The variety of plants, and the organization in different layers, is said to contribute to a system that sustains itself with a minimum input of external energy and human effort, and a minimum output of waste. Generally, the production of food is seen as one of the goals, but just as much ecosystem services and social services are put forward as the benefits of food forest.

These days, next to the about 50 new initiatives of the last years, many more food forests are planned. It is noteworthy that in some cases it starts by farmers wanting to transform their enterprise, and develop a food forest on (part of) their land, but just as often the initiators stem from other backgrounds, far away from agriculture. This also implies that it is not always land in agricultural use that is transformed; it is today also urban green area, wasteland, estate or even nature area that is transformed towards food forest. And it is important to see that such food forests theoretically can be developed out of existing forests by over time introducing new species, as also today certain types of forest contain many species that deliver berries, nuts and other edible goods, but in most cases they are newly planted, and in that case from scratch planned as food forest, that is to say with an appropriate combination of trees, shrubs and plants for that particular site, matching with the goal of food production.

The larger frame for this seems to be a strong concern for food production, and a desire for a sustainable way of treating the earth. Today's agriculture comes with big problems. Not only should we speak about land degradation, extinction of species and pollution of ground water –and less known a phosphate shortage- but also larger societal problems such as obesity, injustice and alienation of nature are, in between other causes, associated with agriculture as it operates today. New roads are seen in different directions – some claim that high tech production in closed systems allows for maximum health, minimal input and zero waste. Others think that agriculture should be much more multifunctional, that is to say, serve goals at the same time, such as wildlife management. Often the global system is blamed to be a major cause and as a response it is said that our food system should be organized more on a regional scale – think of the area to 50-300 kilometres around major cities.

Food forests as an idea fit in such perceived solutions, but they seem to be only one manifestation of a broader phenomenon that is perhaps best addressed with the word agroforestry, which points at forest-like systems as a context to cultivate and produce. On the word 'voedselbos' many different interpretations exist, as also MergenMetz argue, adding that 'voedselbos' more than agroforestry refers to gardening, and is not to be seen as a method for commercial agriculture – perhaps mainly a site of experimentation for future innovation. Apart from the linguistic debate, agroforestry certainly is seen as a commercial agricultural practice. Agroforestry can have many faces, such as 'strokenbouw', the Dutch word referring to the organization of plants, shrubs and trees in rows; small fields within forest-like plantations; or rather free organization of plants, shrubs and trees and even animals – especially pigs can have a role in such systems, also to contribute to a healthy and varied vegetation. In all cases the assumption is that such planting methods help to counter diseases, enable plants to support each other in terms of nutrients and waste management, and care for each other – think of wind shield. Monocultures may have advantages on the short term, as they allow for maximizing harvest per hectare thanks to plant modification, added nutrients and crop protection, but polycultures, again another word associated with food forest and agroforestry, is claimed to be more efficient on the long run – as they are self sustaining, and therefore require less input and less attention. Especially the positive effect on the

soil is mentioned. A noteworthy aspect, as a recent study of the Dutch environmental planning bureau claims that soil degradation will be a major problem in our future food provision.

If we should be sceptical or positive about such ideas, or both at the same time, depends on our expectations. At Van Hall Larenstein, our engagement with food forests is organized within several professorships that depart from different starting points, such as landscape design, soil, health, regional food production or citizen participation. But we take as a shared starting point that we want to look at such new initiatives from the viewpoint of food production. Seen in that way, we discuss with new initiatives their ambitions: how much, and what food ingredients, do you expect to be produced? We note that more often there is a certain shyness to speak about food forests in that way, or even resistance, as in comparison to common agriculture the production is presumably less, and certainly less quantifiable. This in fact points at a contradiction: due to its multifunctional approach, the isolated question towards measurable produce becomes to be unanswerable, especially if we look at it in terms of business models. In some cases it even goes as far as the production of food only being the background for a number of very different services, that guarantee an income –even if that income is often very moderate- and give meaning. For example, people with difficulties to fit in regular working schemes can be employed, if there is a subsidy, and if the enterprise can make a model out of it. That makes sense, for example as an answer to a harvesting system that may be more laborious and, thus, expensive. For us, however, the food production side is crucial, if only because the word in itself underlines the aspect of food. But primarily it helps us to decide why we should engage in food forests. Obviously, everyone is free to start a food forest, and enjoy it as an innovative enterprise. But if it comes to research we can do in the context of higher education in the sector of landscape, environment and agriculture it becomes to be more demanding. Speaking about the food production side helps to think of food forests as a potentially sustainable business model. And such sustainable business models imply organization. If food has to be produced in a way that it can be quantified, and harvested efficiently, and planned over the years, we immediately see that this comes with design – such as, for example, an organization in rows that are accessible for machinery. For us, from a landscape point of view, this is interesting. The word 'food forest' tend to distract: it suggests for most people a fairy tale image of a forest where we can have a stroll with a basket, and pick berries or collect nuts. Even if that is in some cases real, it is far away from an efficient business model that guarantees substantial, continuous and affordable food production for our densely populated cities.

For us the larger question is how our western metropolises feed themselves in the future, in the context of a circular economic system, and with the requirement of an accessible, attractive, healthy landscape. Than, perhaps, food forests are an option, but we still have to feed the metropolis. Only if we think of food forest systems on a very large scale – be it in endless small enterprises of a few hectares, or big ones of 200-1000 hectares- food forests can make a difference, and the perceived advantages in comparison to today's agriculture can be played out.

In certain parts of the world agroforestry, or food forest, is developed as a new road in agriculture for itself. In the Netherlands, such initiatives generally orient themselves on the nearby city, as their legitimacy relates to changed perceptions of food and agriculture within the urban culture. That also means that such initiatives partly have to shape their own market – perhaps as their products are niche products with higher prices, and/or because they produce a larger variety, but less quantity, so that a bit more curiosity of consumers is required. In the Netherlands with its high land value and strong competition on every square metre, the perceived legitimacy of such a new way of producing food is essential. Not only do different claims compete (think of leisure, nature, forest, urban green, water management) but food forest, or agroforestry, also does not exactly fit in the traditional ways in which we describe our surroundings in planning systems and legislation: seen from the point of view of classical agriculture, food forests expand the definition towards nature –hence again another associated word, 'nature inclusive agriculture' - but seen from the point of forestry, it perhaps shift to leisure, or urban green.

In the context of our professorship studying sustainable foodscapes in relation to cities, we tend to take these initiatives seriously, and to carefully search for how these initiatives can become a steady part of the landscape in terms of (agro)economy and planning. That is one of the reasons we want to look for food forests on a much larger scale than the current small initiatives. We are convinced that studying

these new perspectives on a regional scale, in terms of hundreds or thousands of hectares, we are able to see the specific challenges for planning and landscape design. Therefore, we not only respond to initiatives that look for support in terms of research, but we also intend to shape or co-shape initiatives on the larger scale, as a means to study the challenges that come with it.

In our experience, many of these new initiatives rely on idealism, or even the strong belief that the road as proposed simply is good. This enshrouds what we think is important, and that is a debate on how such food forests would function in a regional food system, and in what way they can be designed to fit in regional landscapes. That requires to rethink such food forests and to describe them as rather regular farming systems, to be compared with other ways of farming and producing food. In a small piece of research we currently study the transformation of two farms, to be able to be more precise what is exactly the future business model, and to be able to consider what would happen if such businesses, in all their variety, would be multiplied. The focus on food and the business model does not throw away the innovation and wider services they bring for nature and society, but enables to understand them as firms with an economic rationale. A focus on a regional scale also requires looking at such food forests as components of a bigger landscape, more than the very small experiments we see today in the Netherlands. From the perspective of landscape planning, landscape architecture and urbanism such food forests become to be very relevant, if they can be upgraded to systems of hundreds of hectares, and convincingly can show to be a serious alternative for traditional farming on a regional scale. If yes, they may propose an entirely new agricultural landscape, and in terms of a food system, entirely new chains of food towards the nearby city. Specifically in the Netherlands this is essential, as the high value of land demands for a substantial income.

We are interested in the fact that perhaps small enterprises in the range of 1-5 hectare work together in larger networks, and together can provide a range of produce. At the same time, we engage in projects for large enterprises, in terms of 100-1000 hectare. The question if one strategy (many small) has advantages above the other (few large) is one of our research questions. The same goes for the comparison between food production on areas previously not seen in terms of food, and 'traditional' agricultural land. This happens in our Vruuchtgebruik project –best translated as 'usufruct'- in which we study the options for public urban green space to produce substantial quantities of fruit, which does not happen, currently. This starts with trying to develop methods for observing what currently is produced, and how this can be enlarged. We also study, for example at our own estate, the differences between newly planted and planned food forest versus existing forest, that via thinning and introducing new plants is transformed. We look at this in terms of planting and management, but it is vital to think through the potential food chains: what are appropriate harvesting techniques, what is the range of produce and what is the market for this produce? For example, on our own estate of 30 hectare we study to what extent the school canteen can integrate produce of the new food forest. What type of produce we will have; how will this develop over time, and what products can be made out of it? Can this be sustainable, also in economic terms, or is it merely a nice hobby without relevance for a food system that also has to be efficient, reliable and relatively cheap?

We assume that food forests produce a larger variety, but in small quantities. Optimists and wildcrafting protagonists tell us that we can eat many more products from forests – thin of the young leaves of beeches. That may be all true, but it is a reality different from the consumer power: will it be bought, at the right time, for a realistic price, and on the long run? Therefore, the production of food forests comes with challenges in terms of market and logistics: To be relevant for the food system, large quantities of equal produce are needed. How does that match with attractive but small amounts of perhaps relatively unknown edible goods? Marketing, branding, educating, tasting and trying out will be inevitable components of these new branches of a food system. From the perspective of landscape this is highly interesting, as it broadens the issue from mere food production or business models to landscape design. Accessibility, attractivity, and identity become to be important. In this, not only a number of food forest enterprises are interesting, but it is the entire system of infrastructure and interfaces, or in different words, the organization of the food chain, that makes it instrumental for landscape design. If we manage, as we wish, to contribute to set up a project for hundreds, if not thousands hectare of agroforestry near the city of Nijmegen it becomes to be a regional landscape transformation with numbers of fascinating questions that also address the water system, for example, and certainly deal

with branding the region. But if such a system manages to produce substantial quantities, and if it makes sense to look for markets in the direct surroundings, that also changes the way food is transported, sold, tasted in the nearby city.

At the background of this, we currently study literature. We observe a gross confusion on the words food forest, agroforestry, polyculture and more, and a worrying lack of embedment in the international discourse, to which we also want to contribute with this paper. As many of the new initiatives are nurtured by idealism, a practical interest in definitions is absent. But to be of influence, it has to be clear what we are speaking about. Currently, a green deal on food forests is in preparation, being a declaration by the main involved people, firms and organizations of the main issues to be solved for further progress. This also is a way of cleaning up our language, and be clear about the aims, ambitions, restrictions, (international) examples and actual results. We hope in a year to help clarifying the debate.

## References

Richard Heinberg and Michael Bomford (2009) *The Food and Farming Transition: Toward a Post Carbon Food System* Santa Rosa: Post Carbon Institute

Erismann J.W. e.a., 2016. Agriculture and biodiversity: a better balance benefits both. *AIMS Agriculture and Food*, 1(2): 157-174.

Hart, A. J., 1996. *Forest Gardening: Rediscovering Nature and Community in a Post-Industrial Age Manifest Natuurinclusieve Landbouw. Op weg naar Nederland als Levend Lab.* januari 2017.

PBL, 2010. *Wat natuur de mens biedt: Ecosysteemdiensten in Nederland. Rapport | 09-03-2010 Den Haag.*

Shepard, M., 2013. *Restoration Agriculture. Real world permaculture for farmers.* Acres U.S.A., Inc. 344 pp.

Smits M.J. en Linderhof V., 2014. *Circulaire economie in de landbouw. Een overzicht van concrete voorbeelden in Nederland.* LEI Rapport LEI 14-119. Wageningen.

Huffington Post 8 juli 2016: *If Agroecology Is So Great, Why Aren't All Farmers Doing It?*

<https://www.mergenmetz.nl/actueel/nieuws/ecologisch/voedselbossen-de-zin-en-de-onzin/> accessed 15 August 2017



# The transformative potential of agroecological farmers: an analysis of food system strategies developed through participatory processes in Nicaragua and the UK

Elise Wach<sup>1</sup>, Santiago Ripoll<sup>2</sup>, Chris Smaje<sup>3</sup>, Jorge Irán Vásquez Zeledón<sup>4</sup>, Clare Ferguson<sup>5</sup>, and Julio Hector Sanchez Gutierrez<sup>4</sup>

<sup>1</sup> Institute of Development Studies / STEPS Centre, University of Sussex, United Kingdom

<sup>2</sup> Institute of Development Studies / STEPS Centre, University of Sussex, United Kingdom

<sup>3</sup> Vallis Veg Farm and Land Workers Alliance, United Kingdom

<sup>4</sup> Programa De Campesino a Campesino UNAG, Nicaragua

<sup>5</sup> SEED International / Land Workers Alliance, United Kingdom

---

## Abstract

In the current social system which tends to marginalise small scale producers, frame the interests of consumers as antithetical to those of producers, and force producers to compete against one another, there are questions about the extent to which strategies and alliances identified by agroecological farmers would be sufficiently transformative (or ‘radical’ according to Holt-Giménez and Shattuck, 2011) to address the problems of our existing food systems. In the context of our globalised and unequal food system, there are also questions about the extent to which strategies of farmers in the so-called global south might complement or contradict those of farmers in the so-called global north. Building on a participatory farmer-led research initiative, this paper analyses the strategies developed by small-scale agroecological producers in the global south (Nicaragua) and north (UK), and the extent to which they might be sufficient for transforming food systems to become socially and ecologically regenerative.

## Section 1. Introduction

Now more than ever, evidence overwhelmingly concludes that our food systems are failing to adequately nourish our populations and are simultaneously severely degrading the ecosystems on which they depend. While there is widespread agreement that our food systems need to change in order to more adequately feed human populations and to become more ecologically sustainable (or even regenerative), there is a wide range of perspectives about what can and should be done in response to these failures.

Strategies and approaches based on concepts of agroecology and food sovereignty offer potentials for addressing many of the problems in the mainstream food system. Agroecological approaches have been shown to increase dietary diversity, maintain or increase yields and sustain or even enhance ecosystems (Altieri 1987, Gliessman 2007, Pretty et al 2006, Sevilla Guzman and Woodgate 2003, Chappell and La Valle 2009). Whilst some interpretations of agroecology include an explicit focus on redistributing power within food systems, for example, through valuing farmer knowledge and agency (Mendez et al 2013), agroecology as a concept can and in some cases has been reduced to technical agricultural approaches which leave out the social aspects of agriculture and food (Levidow 2015). However, the concept of food sovereignty includes a more explicit aim on reforming the social aspects related to food, such as through localising and democratising control of food systems (Patel 2011).

Holt-Giménez’s and Shattuck’s (2011) quadripartite<sup>62</sup> classification of approaches for reforming the food system indicates that agroecology and food sovereignty concepts include both trends which could be classified as ‘progressive’ as well as those that would be considered ‘radical’. Progressive trends, according to the authors, include alternatives to industrial foods which are ‘largely within the economic and political frameworks of existing capitalist food systems’ (115). Radical trends include a stronger focus on ‘entitlements, structural reforms to markets and property regimes, and class-based, redistributive demands for land, water and resources’ (Ibid). The authors argue that progressive trends alone would be insufficient to adequately transform the ‘practices, rules and institutions determining the world’s food systems’ in order to address hunger (132) and call for more alliances between progressive and radical trends. Tilzey (2016) also argues that without ‘radical’ (or counter-hegemonic) approaches, it will not be possible to adequately redress the problems of our existing food systems.

---

<sup>62</sup> Their classification includes neoliberal, reformist, progressive and radical approaches

Drawing on a Marxist analysis, Tilzey details the way in which the social system at present – which conceptualises the ‘market’ and the ‘economy’ as separate from society and ecologies – will only be able to mitigate but not resolve the ‘disbenefits’ of existing food systems in the social (e.g. livelihoods, dignity, agency, health) and ecological (e.g. soil fertility, biodiversity, climate change) realms. In this existing system, consumer interests (e.g. cheap food) are often perceived of as antithetical to producer interests (e.g. high farmgate prices), and producers are driven to compete with one another to maintain their subsistence and social position (Ibid). Without radical action to allow for cooperative use and exchange of resources, services and products, Tilzey argues that food systems will continue to ‘externalise’ ecological and health effects and will continue to replicate highly unequal distributions of power.

In our current social system which tends to marginalise small scale producers, frame the interests of consumers as antithetical to those of producers, and force producers to compete against one another, would strategies and alliances identified by farmers be sufficiently transformative (or ‘radical’) to address the problems of our existing food systems? And would strategies of farmers in the so-called global south be similar or contradictory to those of farmers from the so-called global north?

Building on a participatory farmer-led research initiative, this paper seeks to answer the question, **‘What types of strategies might be developed by small-scale producers in the global south and north, and are these sufficient for transforming food systems?’** Specifically, it details the framings articulated and approaches identified by farmer panels in the UK and Nicaragua during a two year participatory systemic inquiry process and provides an analysis of the extent to which these strategies might have the potential for transforming markets to result in food systems that produce healthy, nourishing, equitable and ecological outcomes.

The make-up of these farmer panels makes their insights particularly distinctive: rather than being a representative sample of the farming population in each country, panel members are farmers who are involved directly or indirectly in the agroecology and food sovereignty movements of their respective countries, and are also succeeding at present to make ends meet as small-scale agroecological farming businesses in the current capitalist food system. It is anticipated that this particular positioning could yield the tensions and contradictions between farmers’ immediate economic survival (which entails working within the existing system) and their other goals and aspirations such as regenerating their land, building communities and equitably nourishing populations, which may require transformation of the systems on which they currently depend.

## **Section 2. Rationale and overview of research approach**

This section provides a brief overview of and rationale for the research methodology used for the project<sup>63</sup> which has led to this paper. A longer version of the methodology is available in the full length paper.

In order to answer the research question we use a critical case study (Flyvberg 2001), based on a participatory systemic inquiry approach, in partnership between researchers at the Institute of Development Studies (University of Sussex) and farmer and community-led organisations in Nicaragua (Farmer to Farmer Programme<sup>64</sup>, PCAC), the UK (Land Workers Alliance, LWA) and Senegal<sup>65</sup> (Forum for Endogenous Sustainable Development<sup>66</sup>, FODDE).

---

<sup>63</sup> The project is titled ‘Transformations towards agroecological food systems’ and commenced in January 2016, with two years of initial funding from the Daniel and Nina Carasso Foundation and the New Field Foundation.

<sup>64</sup> Programa Campesino a Campesino, a part of Unión Nacional de Agricultores y Ganaderos (UNAG)

<sup>65</sup> The findings from the Senegalese counterparts to this study have not been incorporated into this paper due to capacity of key staff involved at the time of writing, but will be analysed and incorporated at a later stage of the project.

<sup>66</sup> Forum pour un développement durable endogene

In each country, a panel of 12-15 farmers of diverse ages, farming types and gender who self-identify as practicing agroecology (to varying extents) is at the centre of the research process. The overall question that the panels have sought to answer is, 'What are the potential pathways for realising agroecological food systems?' The conceptualisation of 'agroecological food systems' themselves was determined by each of the farmer panels, who were encouraged to reflect on their own experiences as farmers and consumers, and to explicitly consider the ecological and social (health and nutrition, communities, livelihoods, etc.) domains of food systems.

In order for farmers to answer the overall question of the project, the research approach has included: (i) participatory complex systems mapping to enable farmers to identify the current dynamics in their food systems which maintain them in their current form (Burns and Worsley 2015, Burns 2012); (ii) participatory development of research questions; (iii) collaborative research<sup>67</sup>, led by local organisations with support from the University of Sussex researchers; (iv) deliberative processes for participatory analysis of research findings (Carpini 2004) drawing on a citizens jury approach<sup>68</sup>; (v) identification of leverage points for change based on systems thinking (Meadows 1997, 2008, Senge 1990); and, (vi) the co-development of strategies with potential allies and agents of change (Wielinga 2012) identified by the farmer panels in each country. The rationale for this combination of approaches is described in detail in the full length version of this paper.

### **Section 3. Approaches identified by farmers through participatory processes**

Throughout the participatory food system analysis detailed above the deliberative farmer panels analysed the dynamics that enhance or constrain agroecological farming in opposition to other models of production. In this section we summarise the different framings that farmers used to depict these dynamics and the strategies identified to transform them towards agroecological or regenerative food systems. As an action research project, the framings and strategies proposed evolved over the course of the project, and significant changes in framings are noted.

Key themes that emerged from the research, deliberation and development of strategies in relation to the research question included approaches to (i) recognise and account for the 'true' costs and values of food, (ii) increase access to land for agroecological farmers; (iii) support alternative distribution and retail that enables local and agroecological production; and, (iv) ensure imports and exports are fair to producers and consumers across countries. In this short paper, only one of these four themes is discussed. In the long version, all of these approaches are discussed and analysed.

#### **(i) Approaches to recognise and account for the 'true' costs and values of food**

Agroecological farmer panels in Nicaragua and the UK agree on the fact that at present, prices received by farmers and paid by consumers do not adequately respond to the true costs of food production or the wider social and ecological effects of farming approaches. Farmers in the UK explicitly discussed the ways in which they felt that their work was undervalued, particularly in financial terms by both the public and the government. Either framed in terms of externalities or other terms, farmers were frustrated and challenged by the fact that the environmental, social and health values of their farming models were not incorporated into market prices.

In the UK deliberative workshop, farmers embarked on a lengthy discussion of the concept of 'value' itself – who determines it and what it includes and does not include. It was noted that while this could be a bit of a rabbit hole, it was important to take the time to reconsider what 'value' really means. Farmers indicated that there were certain things that simply could not be monetised: one farmer stated,

---

<sup>67</sup> In each country, 3-5 primary and secondary 'micro-research' projects were undertaken

<sup>68</sup> See for example, work with 'farmers juries' <http://pubs.iied.org/pdfs/G02530.pdf>

‘the thought occurred to me that land is priceless [and] I really like the idea that seeds are priceless.’ Similarly, in the systems mapping workshop, it was noted that farmers make more than an economic investment to the land and that there are also emotional and cultural attachments to land that need to be recognised.

Despite the acknowledgement that not everything could or should be converted into a quantifiable (economic) value, there was a sense that more was still needed to be done to ‘account for’ the ecological and social contributions (or on the flip side, detriments) of certain farming practices. They indicated a need for market transactions to incorporate the ‘true costs’ (water pollution, obesity and diabetes, loss of biodiversity and so on) and the ‘true benefits’ (healthy diets, lively rural communities, healthy soils, etc.) of food production. The panels investigated potentials of various approaches that might take into account social and ecological costs and benefits of food production, including the roles of certifications, consumers and the state. These discussions varied between the two countries, perhaps due in part to the different positionalities and experiences of the farmers in Nicaragua and the UK.

#### Differentiation of agroecological food and farming: roles of consumers, citizens and the state

Both Nicaraguan and UK farmers discussed the issue of signalling as a potential way to ensure that agroecological farming was compensated appropriately. Nicaraguan farmers focused on signalling to consumers, whereas in the UK, signalling to consumers was emphasized in the beginning but then changed to signalling to government bodies (e.g. planning authorities).

The Nicaraguan farmers indicated that signalling to consumers through certifications could result in price differentiation – the receipt of higher prices for agroecological products from concerned and capable consumers. At present, the only certification schemes that exist are third party certifications which are very costly, based mostly on high-value commodities, and which do not certify all products of the farm but only specific products that are marketed. Voluntary schemes exist, but are not monitored and can be hijacked by conventional farmers. Farmers noted that public certification could be a good option to address the current weaknesses of the existing schemes.

Farmers in both Nicaragua and the UK determined that there was a role of consumers as market actors in acknowledging the benefits to their own health, their ecosystems and their rural communities by virtue of choosing to consume agroecological rather than conventional products. In the UK, for example, supermarkets are susceptible to mass customer pressure. In Nicaragua, farmers themselves decided to pledge to personally take more responsibility for their purchasing choices.

However, as the project developed, the farmer panels, particularly the UK panel, saw also the limitations of consumers in terms of market actors. Whilst initial framings of the problem towards the beginning of the research initiative focused on consumer willingness to pay (e.g. ‘if only consumers were more knowledgeable about what went into their food...’), as the process went on, farmers acknowledged that they themselves often made purchases that did not support local and agroecological production. While Nicaraguan farmers indicated that they could do more to be responsible consumers, UK farmers indicated that their choices were often driven by the budgets they had available to them (which were often cited to be based on relatively low earnings), pressures from their children (e.g. for pack lunches at school where children compare lunches with one another) and availability of products to choose from (i.e. the lack of availability of local, ecological and indigenous foods in their shops). UK farmers also discussed the limitations of consumer knowledge and the complexity of the issues. One participant stated, ‘...tomatoes from Spain, pasture-fed beef...It is very complicated, what’s better? It is bewildering to consumers and farmers.’ Farmers concluded that it was important for consumers to have more information but that it is not realistic to allocate all the responsibility to consumers and expect them to understand all the issues and also have the financial and social positioning to consistently purchase ‘ethical’ products.

Further, while the majority of the UK panel members currently benefit from price differentiation in their business models, farmers noted that the creation of a dual organic / non-organic system or niche (e.g. box scheme) approach was inherently flawed in that the majority of consumers cannot access such products. It was noted that while the agroecological market had grown – for example, with organics now comprising a larger proportion than ever of food markets, it is still the minority (only 1.4% in the UK in financial value<sup>69</sup>) which means that the remaining majority markets of such food markets continue to cause ecological and social damage.

It was discussed at various stages of the UK deliberations that within the current social (or ‘economic’) system, there is an explicit tension between wanting to spread agroecological production and staying in business. Several UK farmers indicated that they were happy for there to be more agroecological farmers in the UK but that they did not want them to be their close neighbours as this would create competition and crowding within what is currently a limited niche market. Recognising the inherent tensions between their own interests and the wider aim of spreading agroecological production, farmers concluded that the dual economic system based on consumers paying a premium would not resolve the problem of ensuring that agroecological farmers are valued appropriately while also ensuring that food systems adequately nourished the population.

As deliberations continued in the UK, panel members identified a need to ‘go bigger’ and consider a reframing of agroecological food systems to be in the public interest. For example, low food prices are often seen to be in the public interest but this is against the farmer interest and also often undermines local economies. With a public interest approach, however, health, community, dignified jobs and ecosystem services (e.g. biodiversity, water quality, flood reduction, etc.) could also be taken into account, tipping the balance to favour local and agroecological production. The alignment with the public interest was also raised in discussions about access to land. It was suggested that reframing agroecological food systems in this way could both build alliances with complementary citizens groups as well as creating legal traction among public authorities which are charged with promoting the public interest. Such public authorities might have the ability to support agroecological farming (e.g. through increasing access to land, through supporting cooperative market approaches and through subsidising agroecological farms), and to disincentivise unsustainable and unhealthy farming (e.g. through taxes and penalties).

Overall, while there was still some recognition of the power for consumers to support regenerative food systems, the focus shifted from one that relied on consumers choosing products from more ‘sustainable’ or ‘equitable’ food and farming models, to a focus on building alliances between farmers and consumers as citizens. UK farmers stressed the need for a focused effort to collectively define the values that should shape our food systems. In the case of Nicaragua, farmers called for a recognition of the right to live in a healthy environment, free from pollution.

#### **Section 4. Analysis and discussion of strategies<sup>70</sup>**

Farmer panels propose a diversity of market strategies that illustrate the diversity of their objectives as well as a diversity of ways of understanding how markets function. Farmers individually and collectively balance short and long term priorities, which are reflected in the problems and strategies they identified. Strategies proposed included: (i) individual behaviour change: in which consumers would make better choices by purchasing agroecological products, in part through ‘liberal’ reforms that make the markets work better e.g. certification in the case of Nicaragua; (ii) working within the current market system to allow for agroecological food systems to flourish, by virtue of creating a level playing field through taxes and subsidies; (iii) actively supporting alternative market models such as Tamar Grow Local, designed to explicitly serve both consumer and producer interests, including ecological aims; (iv) working to structurally transform the food systems, with policies for both redistributing and

---

<sup>69</sup> Soil Association 2016 Organic Market Report, available from <https://www.soilassociation.org/news/2016/organic-market-report-2016/>

<sup>70</sup> A more detailed analysis and discussion is presented in the full length paper

transforming ownership of the means of production (e.g. land redistribution, communal ownership of resources, etc.); and (v) recognising that there are many elements in food systems which cannot be treated as commodities and must therefore be preserved through an explicit articulation of common values and agreement about collective interests. These different market approaches resonate with the 'reformist', 'progressive' and 'radical' discourses and models that Holt-Giménez and Shattuck describe (2011). As expected, the 'neoliberal' model of production was rejected by the farmers, and whilst some liberal market framings were articulated, they are used within the reformist category: none of the market strategies proposed would be included within the neoliberal category.

Farmers actively recognise the tensions that exist between working within the system and transforming the food systems, with explicit concerns about co-option, and being trapped into a niche market. Yet they also acknowledged concerns about feasibility, political will, and insufficient capabilities and expertise needed enact transformative changes to food systems. Therefore there is an agreement that both progressive and radical approaches were necessary in the short term – none of them were sufficient on their own. However, the coexistence of radical and progressive strategies had one key requirement, that they are combined in ways that powerful actors do not co-opt them and in ways that they do not undermine their long term goals.

The next steps in this research initiative includes a process that will bring farmers from these countries together to further explore and test the framings and solutions that arose from each panel and to enable farmers to learn from and enhance one another's perspectives.

## References

- Altieri, M., 1987. *Agroecology: the Science of Sustainable Agriculture*. Westview Press, Boulder
- Burns, D. 2012. 'Participatory Systemic Inquiry', in IDS Bulletin Special Issue 'Action Research for Development and Social Change' 43.3: 88–100
- Burns, D. and Worsley, S. 2015 *Navigating complexity in international development*. Practical Action Publishing
- Carpini, M.; Cook, F. and Jacobs, L. (2004) 'Public Deliberation, Discursive Participation, and Citizen Engagement: A Review of the Empirical Literature, *Annual Review of Political Science* 7: 315-344
- Chappell, M. and La Valle, L. 2009. 'Food security and biodiversity: can we have both? An agroecological analysis. *Agriculture and Human Values* 28:1, 3-26
- Flyvberg, B. 2001 *Making Social Science Matter: Why Social Inquiry Fails and How It Can Succeed Again*. Translated by Steven Sampson. Cambridge: Cambridge University Press
- Gliessman, S.R. (2007) *Agroecology: The Ecology of Sustainable Food Systems*, Boca Raton: CRC Press
- Holt-Giménez, E.; Bunch, R.; Vasquez, J.I.; Wilson, J.; Pimbert, M.P.; Boukary, B. and Kneen, C. (2010) 'Linking Farmers' Movements for Advocacy and Practice', *Journal of Peasant Studies* 37.1: 203-36
- Holt-Giménez, E., Shattuck, A., 2011. Food crises, food regimes and food movements: rumblings of reform or tides of transformation? *Journal of Peasant Studies* 38 (1): 109-144.
- Levidow, L. (2015) 'European transitions towards a corporate-environmental food regime: Agroecological incorporation or contestation?' *Journal of Rural Studies* 40, pp 76-89
- Meadows, D. 1997. 'Places to Intervene in a System: Strategic Levers for Managing Change in Human Systems,' *Whole Earth Review* Winter 1997
- Meadows, D. 2008. 'Leverage Points: Places to Intervene in a System' in *Thinking in Systems: A primer*. Sustainability Institute.
- Mendez, V.E., C.M. Bacon, and R. Cohen. 2013. 'Agroecology as a transdisciplinary, participatory and action-oriented approach,' *Agroecology and Sustainable Food Systems* 37(1):3-18
- Patel, R., 2011. 'What does food sovereignty look like.' In: Wittman, H., Desmarais, A.A., Wiebe, N. (Eds.), *Food Sovereignty: Reconnecting Food, Nature and Community*. Pambazuka Press, Oxford.
- Pimbert, M. (2007) *Transforming Knowledge and Ways of Knowledge for Food Sovereignty*. IIED: London. <http://pubs.iied.org/14535IIED.html>

- Pretty, J., Noble, A., Bossio, D., Dixon, J., Hine, R., Penning de Vries, F. and Morison, J. (2006) 'Resource-Conserving Agriculture Increases Yields in Developing Countries', *Environmental Science and Technology*, 40.4: 1114-1119
- Senge, P.M. 1990. *The Fifth Discipline*. New York: Currency Doubleday.
- Sevilla Guzmán, E. and Woodgate, G. 2013. 'Agroecology: Foundations in agrarian social thought and sociological theory.' *Agroecology and Sustainable Food Systems* 37(1):32–44.
- Tilzey, M., (2016) Reintegrating economy, society, and environment for cooperative futures: Polanyi, Marx, and food sovereignty, *Journal of Rural Studies*, <http://dx.doi.org/10.1016/j.jrurstud.2016.12.004>
- Wielinga, E., Zaalmink, B.W., Bergevoet, R.H.M.; Geerling-Eiff, F.A.; Holster, H.C.; Hoogerwerf, L.; Vrolijk, M.; Teenstra, E.D. (2008) *Networks with free actors. Encouraging sustainable innovations in animal husbandry by using the FAN approach (free actors in networks)*. Wageningen UR.
-

# **Urban Greening via Urban Agriculture to Urban Agritecture - A Comparative study between New York and Shanghai**

**Hemeng Zhou**

CMS, Berlin, Germany

Email: zhouhemeng@hotmail.com

---

## **1. Introduction**

With urbanization process, urban greening as well as urban agriculture has played an increasingly important role in metropolises. Nowadays, limited by land resources, urban greening and urban agriculture have the trend to develop vertically, to fill food and recreation demands from citizens and to be integrated directly into city centers.

### **1.1. Research purpose**

This paper aims to research the development process from urban greening via urban agriculture to urban agritecture; to explore the necessity, interrelation and interaction among the increasingly multi-functional urban greening infrastructure combined with landscape and food production functions; and to analyze the feasibility and challenges of urban agritecture for the future.

### **1.2. Urban agritecture**

Here I use a concept – urban “agritecture” (agriculture + architecture) – to define “with building-integrated agriculture (BIA)” (Figure 1).

Agritecture is categorized into outdoor and indoor forms. Outdoor forms include rooftop, façade and balcony farms. Indoor forms include roof greenhouses, vertical, and indoor farms<sup>1</sup> (Figure ).

One advantage of urban agritecture is that it can be integrated into city centers easily without the limitation of scarce land resources, which is a helpful step to ecologicalization, multi-functionalization and diversifying of re/construction in urban centers. The barrier of urban agritecture is till today either high investment or long-term operation cost, depending on the form, scale, and technology.

Urban agritecture is in my opinion a new trend that combines agricultural, greening and other (e.g. social and educational) functions for densely constructed city centers. It will not replace conventional agriculture with current technology, but it'll be an important supplement for conventional agriculture in the near future.

### **1.3. Research methods**

Here a western and an eastern metropolis – New York and Shanghai – are selected for the comparison, in order to research the differences and impact factors of development processes from urban greening to urban agritecture.

Despite different backgrounds, their political influences for the nations, their economic impacts, their national positions as well as their potentials are relatively similar. Agriculture is considered as a major industry in both China and the USA. However, New York and Shanghai rely on food import. Meanwhile, they both have severe food issues. Thus it is necessary and important to do such a comparative studies under western and eastern cultural and political backgrounds, in order to figure out the influence factors.

Different from western countries, the development of urban greening system in China is closely related with urban planning due to the top-down implementation mechanism of the one-party political system, hence in this research both literature reviews and planning reviews will be accomplished in both cities.

Due to lack of publications about urban agritecture, case studies and interviews with workers in the farms (group 1, 10 interviewees) and experts (group 2, 10 interviewees) from different directions (e.g. urban planning, architecture, ecology, economy, sociology, etc.) about current development conditions of urban agritecture were taken in 2016 in Shanghai and in 2017 in New York as supplement materials. The interviews are currently being transcribed and analyzed.



#### **1.4. Research scale**

Since both cities have huge populations with large administrative areas, in this research my focus lies on urban areas that are miniatures of urban health condition and urban spirit, and are not only highly efficient, accumulated and highly-yield areas but also intensifications of contradictions (Shanghai: purple and orange areas of *Figure* ; New York:

).

Comparative studies

## **2. Comparative studies**

### **2.1. Urban greening**

The greening construction in Shanghai has experienced the development process from points to planes, from slow to fast, and from quantitative to qualitative changes (Zhang et al., 2008). It can be illuminated from a helpful metaphor: the greening area per capita has been increased from “the area of a pair of shoes”<sup>2</sup>, via “the area of a piece of newspaper”<sup>3</sup>, through “the area of a bed”<sup>4</sup>, to “the area of a room”<sup>5</sup> (Figure 5). Before 1949, colonial rulers have built some parks, gardens, green belts, etc. Although rounds of greening plans have been accomplished since then, they were planned from different governmental departments and were uncoordinated (Liu et al., 2007). Until 1984 the greening system planning has been incorporated into urban master plan for the first time. Since the 1990s, urban greening has been more systematically planned (Table 1).

New York’s greening system is mostly related with parks, playgrounds, parkways and green streets, etc. The most important category is the park system, of which the development can be concluded into seven phases (Table ). New York has started building parks since the 17th century. In the middle of the 19th century, one of the world’s famous examples – Central Park, has been planned. Even during the wartime, millions of dollars have still been spent for reconstructing older parks and adding new recreational facilities. From the end of last century, different greening programs have been developed from different city departments and NGOs. Parks are built vertically in the city center (e.g. high line) to restructure and multi-functionalize old infrastructures.

### **2.2. Urban agriculture**

In the late 1980s – shortly after incorporation of the greening planning into urban master plan – the concept “urban agriculture” has been translated by a research institute in Shanghai and introduced to researchers in a conference. In 1995, Shanghai firstly suggested to change the development of sub-urban agriculture to urban agriculture, as sub-urban agriculture has faced the land resource conflict between construction and agriculture. Despite huge progress of the development of urban agriculture over two decades, till end of 2009 the arable area accounted only for 0.12 acre/capita, which was less than 1/12 of the national average, while the construction area was 40% over the total land area of Shanghai, which was even higher than other international metropolises like London, great Paris, etc.<sup>6</sup>.

Since New Amsterdam time (beginning 17th century), the Dutch that have settled down in Manhattan have tried to farm locally (Smith, 2010). Till the second half of the 17th century, various agricultural products were shipped and traded at that time. Since the 18th century, there are increasing community farms that strengthen the connection between local farmers and consumers and promote the development of agricultural economy. According to the research from Urban Design Lab (2012) at Columbia University, nowadays there are over 1,000 community gardens and urban farms. However, depending on the definition of the term, there are between 15-30 “farms” (Figure 6).

### **2.3. Urban agritecture**

In Shanghai, urban agritecture showed up in the last decade generally because (1) land resource price has continually increased<sup>7</sup>; (2) citizens have more demand of experiencing farming and greening in the city center; (3) food safety problems encourage people to spend more time or money on food products. To date, there is no literature about agritecture in China. The case studies accomplished in 2016 (Figure 7) showed that the development of urban agritecture in Shanghai is in the starting phase.

For outdoor forms: So far façade and balcony farms don’t exist. Rooftop farms are developing and profiting well. For indoor forms: according to relative laws in China, rooftop greenhouses as additional construction on buildings are illegal. Indoor farms located in (sub-)CBDs have more educational and

recreational rather than productive functions, while highly productive indoor farms, which are not located in the city center, are struggling for survival.

In New York, urban agriculture has been developed since the end of last century. The technology ranges from soil-based low-tech methods through deep-water culture, nutrient film technology, to soilless high-tech methods like hydroponics, aeroponics, or aquaponics.

For outdoor forms: balcony and façade farms also don't exist, due to immature technology and high operation costs. Rooftop farms are well developed. Taking Brooklyn Grange, the world's largest rooftop soil farms (Figure 8), as an example: it keeps bees; produces over 500,000 vegetables per year; and is profitable since the first year of the existence, thank to grants and funding. About 2/3 of the profit comes from events, public tours, wedding photo shooting, etc. and 1/3 from their produce.

For indoor forms: Mono-layered rooftop greenhouses with hydroponic system like Gotham Greens or Sky Vegetables are functioning well (**Error! Reference source not found.**, *Figure* ). Indoor farms like FarmOne<sup>8</sup> (*Figure* ). Both farms use hydroponic and LED lighting systems; no pesticides but beneficial bugs against pests; and air conditioners.

### **3. Analysis**

#### **3.1. Similarities**

##### **3.1.1. Development processes**

Urban greening was developed 30 years earlier in New York than in Shanghai. A few years after the development of urban agriculture in New York, this concept showed up in Shanghai. Urban agriculture was developed almost at the same time in both cities. Besides different starting time, the development processes from urban greening to urban agriculture are quite similar in both cities (Figure 12).

Based on different functions, urban greening and agriculture develop multi-functionally with different forms. They develop at the same time; do not replace but supplement each other's functions; and play important roles on sustainable metropolitan development.

##### **3.1.2. Driving forces**

Urban agriculture and local food system have caught increasing attention in both cities, due to high food costs and uneven fresh food access.

Severe food issues also accelerate the development of urban agriculture and agriculture in both cities. They both rely on the import of a huge amount of fruits, vegetables, meat, etc. every day. Problems like overuse of pesticides, massive production, transportation, and many middlemen have created a series of food safety issues in both cities. Citizens are nowadays more aware of purchasing local or organic food.

##### **3.1.3. Social acceptance**

The high portion of immigrants leads to a mixed culture and high social acceptance. The interviewees show confidence in its future development.

#### **3.1.4. Technology**

Shanghai has learned a lot about urban agriculture from Netherlands and America. In New York private farmers pay more attention on recycling.

New York's entrepreneurs improve the technology of agritecture through new ideas almost every day. There are conferences and meetings organized by non-profit organizations like NYC Ag Collective to share new ideas and technologies. In comparison, companies in Shanghai mostly develop on their own.

### **3.2. Differences**

#### **3.2.1. Development condition**

In Shanghai, the development of urban agriculture and agritecture is still in starting phase. Outdoor forms of agritecture are developing faster than indoor forms currently.

In New York, urban greening is systematically developed (Figure 13). Lower income areas have more vacant lots but less access to fresh food retail – they have a greater need for urban agriculture. Not coincidentally, these areas have a higher obesity and diabetes prevalence (Urban Design Lab, 2012) (Figure 14). The development of urban agritecture is relatively advanced, compared to most of the cities worldwide. But most agritectural cases are still young (1-3 years).

#### **3.2.2. Distribution**

In Shanghai, the distribution of urban greening and agricultural areas increases along the radius from urban to rural area (Figure 15) while of agritecture reduces along the radius from urban to rural area (Figure 16).

In New York, urban greening, urban agriculture and urban agritecture have reticular distributions.

#### **3.2.3. Cultural background**

Despite Chinese long garden history, the systematic development of green infrastructure as well as the awareness of its importance to citizens' health from the government (Branas et al., 2011) lags behind western countries. Park culture has been an initial and important element in New York's urban development.

Food culture plays an important role in urban agriculture. Chinese food can be roughly divided into eight regional cuisines. Chinese are accustomed of fried cooking. In South China like Shanghai, people eat more vegetables (e.g. Pak Choi) and seafood. Although current technology for agritecture enables to cultivate most plant species indoor<sup>10</sup>, in terms of profit the main species for agritecture are tomatoes, leafy greens, herbs and flowers. Since salad comes from western food culture, agritecture is still limited in Shanghai.

#### **3.2.4. Policies**

Both governments support urban greening and agriculture, and are open to the development of urban agritecture. Compared to Shanghai, New York supplies more funding and grants. The development of urban agritecture in Shanghai is mainly through private entrepreneurs without financial support or cooperation with governmental departments.

### **4. Development strategies**

Despite different development tempos, the development processes from urban greening via urban agriculture to urban agritecture in New York and Shanghai show their similarities and importance under the background of urbanization and globalization. It is not a linear process. Urban greening, agriculture and agritecture are developing at the same time and are supplementing each other.

Environmental pollutions raise the demand and awareness of greening and agriculture in Shanghai. Due to scarce land resources, vertical greening and agritecture are developing fast.

The case studies and interviews show that marketing strategies are key to long-term development of the farms. It is important to have a clear positioning for the farms in the starting phase.

One confusing point in New York is community gardens, which are the combination of urban greening and farming. Despite their productive, recreation and social roles, their efficiency and influences cannot be maximized. Thus a clear cut between community gardens and community farms is necessary.

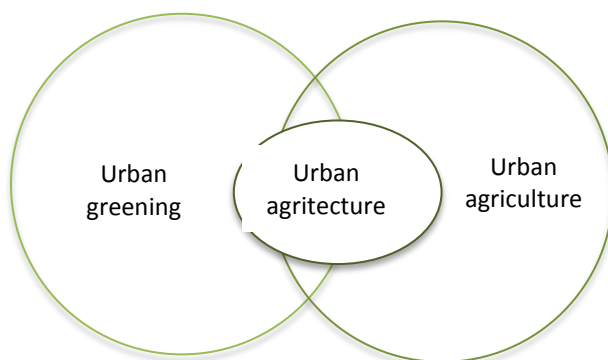
In Shanghai one big consideration in urban agriculture is to reduce pesticide usage and to balance food production efficiency. Strict controls of organic certification are necessary.

Urban agritecture has huge markets in both cities. There are basically two methods to run an agritectural farm successfully: 1. With high technology and single focus on production. 2. With low technology but multi-functions (e.g. classes, farm tours, memberships, etc.). The former one needs governmental or strong financial support for the construction. For the latter one there are currently two forms with low technology and investment: rooftop farms (with cultivating boxes or soil) and rooftop greenhouses.

Different forms of urban greening, urban agriculture and urban agritecture influence the space and citizens differently. The more productive they are, the less recreational, social and educational functions they can bring. So according to the need of spatial, temporal, social, educational and economical impacts, different forms can be used in different areas for different functions in city centers, to construct a sustainable and multi-functional food production net.

The development from architecture perspective is another strategy. There have been many architecture designs about vertical or balcony farms combined with residential or office buildings (Figure 17). In reality, there are some difficulties about plants selection because of local climate, investment, construction structure of the buildings, etc. But it doesn't have to be fancy or utopian. Instead, it can be a reconstruction. With a normal residential building, the design can also be realized easily. There are enough people from middle class or higher levels that would like to pay more in order to have a comfortable residential environment. Therefore, agritecture can also be integrated into architecture market – not only as an advertisement but also as a design idea. In the last couple of years, there has been this idea from the professor from Qinghua University to start “the fourth generation of residential building” in China with green rooftops, balconies and indoor gardens. Instead of greening, a part of it can be farms, to realize the dream of farming from citizens in metropolitan centers!

## Figures



*Figure 1 Relationship among urban greening, agriculture and agritecture*

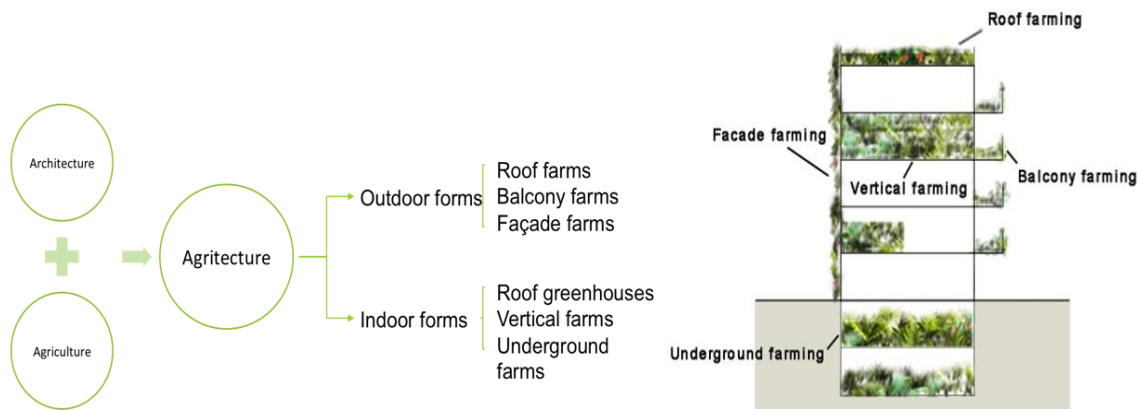


Figure 2 Urban agritecture



Figure 3 Shanghai



Figure 4 New York

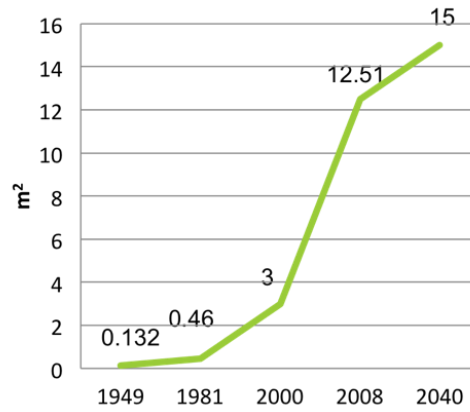


Figure 5 Increase of Shanghai's greening area per capita (by author)

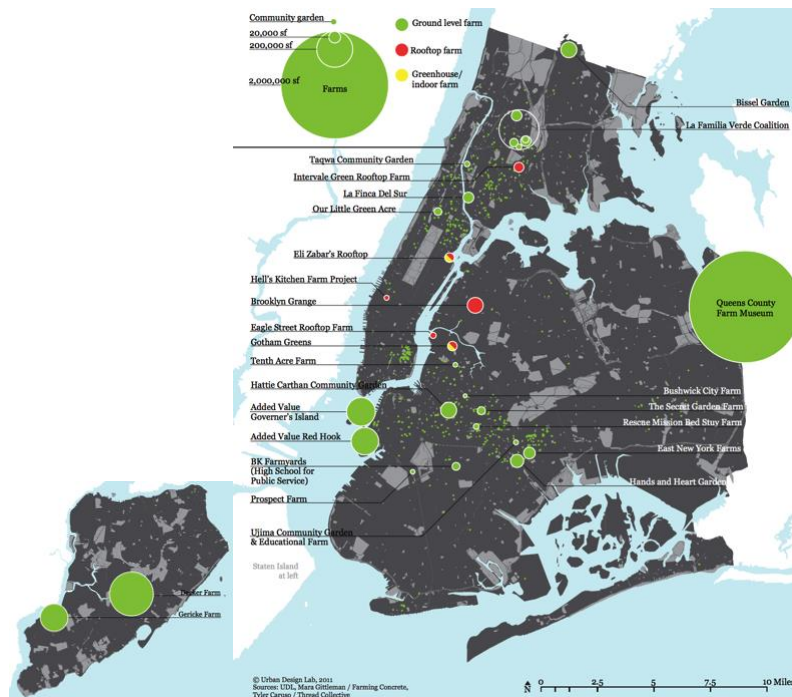


Figure 6 Farms in New York (2011) (Urban Design Lab, 2012)

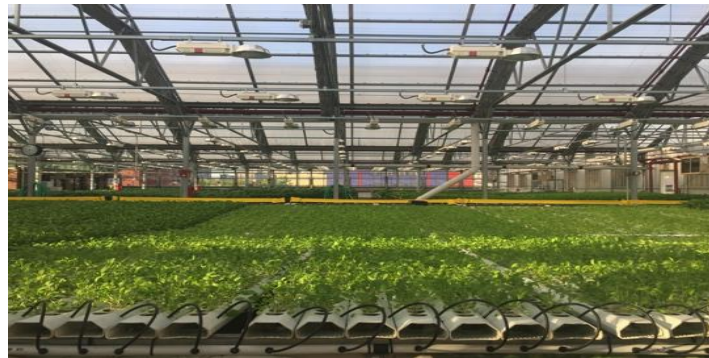


Figure 7 Distribution of agriculture in Shanghai (2016) (according to case studies)





*Figure 8 Brooklyn Grange<sup>11</sup>*



*Figure 9 Gotham Greens (from author)*



*Figure 10 Sky Vegetables (from author)*





Figure 11 FarmOne (from author)

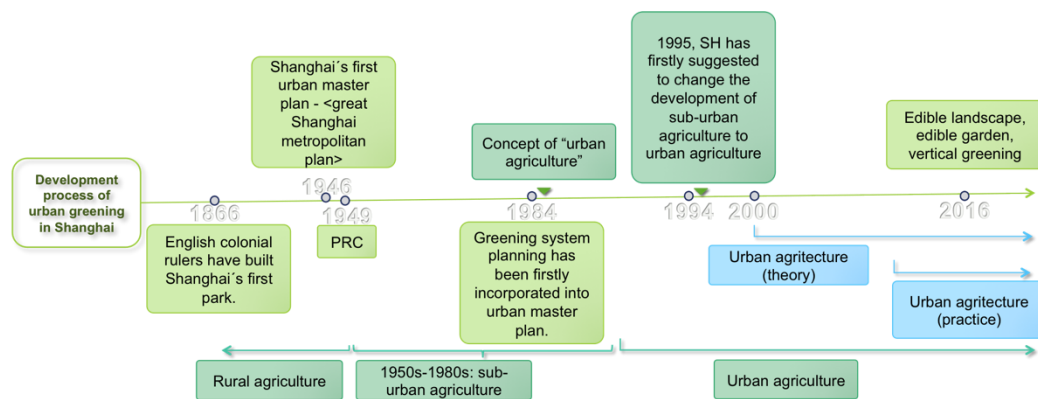


Figure 12 The development of urban greening, agriculture and agritecture in Shanghai<sup>12</sup>

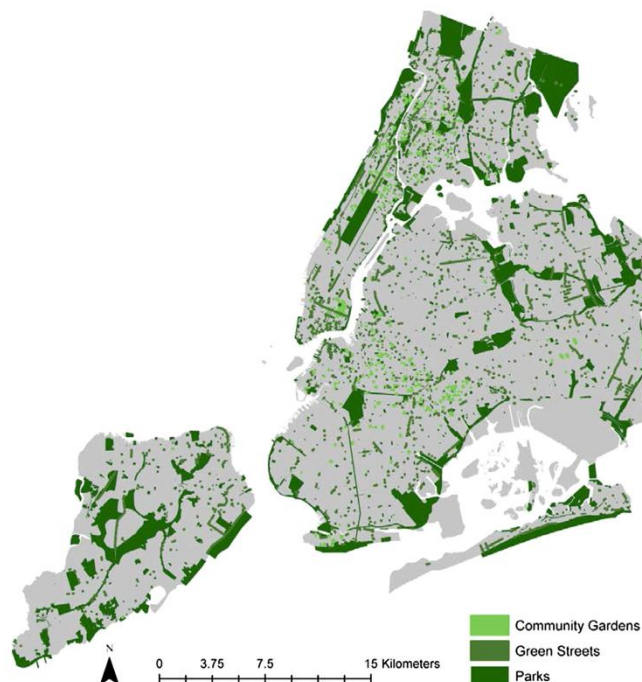


Figure 13 New York Green Infrastructure<sup>13</sup>

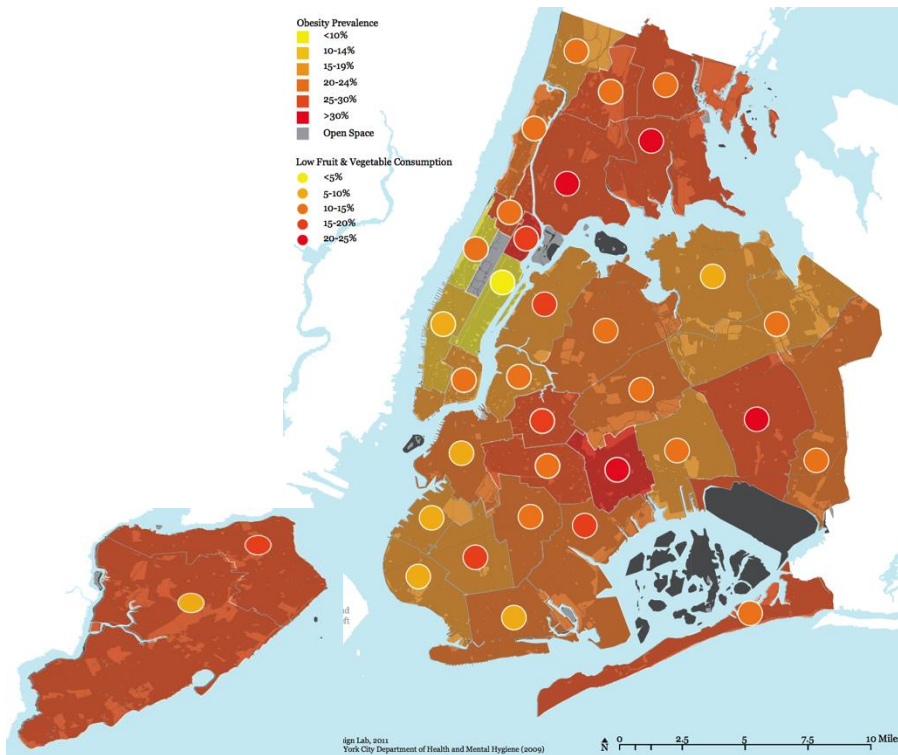


Figure 14 Obesity Prevalence and Fruit & Vegetable Consumption in NYC (Urban Design Lab, 2012)

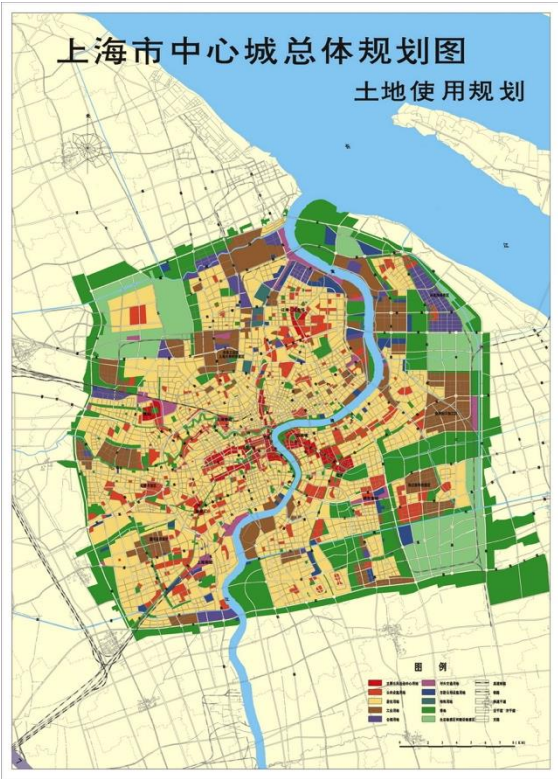
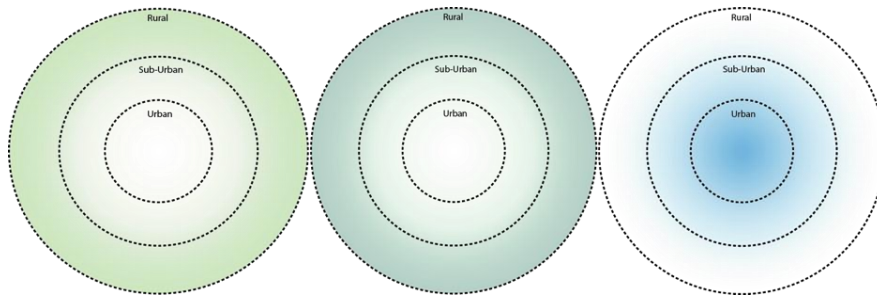


Figure 15 Shanghai Master Planning in Central City<sup>14</sup>



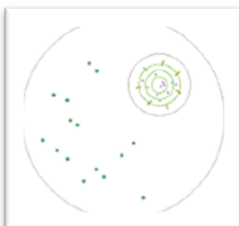

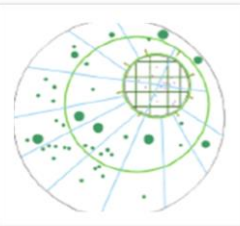
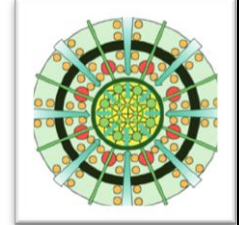
*Figure 16 Range of radiation of urban greening, agriculture and agritecture*



*Figure 17 Design of Ecological Building & Green Community<sup>15</sup>*

## Tables

*Table 1 Construction of Shanghai's greening system with <sup>16</sup>*

P h a s e	Slow develo pment (1949- 1978)	Stable growth (1986-1998)	Fast development (1998-2005)	Qualitative development (2005- 2009)	Planning formation (2009-to date)
M o d e	/				

*Table 2 Development of New York's Park System<sup>17</sup>*

1686-1811	1811-1870	1870-1898	1898-1929	1929-1965	1965-1987	1988-to date
Old Parks	Parks for the New Metropolis	Park Planning for Greater New York	Playgrounds and Public Recreation	Robert Moses and the Modern Park System	Rediscovery and Restoration	Reinventing Parks

## Abbreviations

BIA	Building Integrated Agriculture
CBD	Central Business District
CEA	Controlled Environment Culture
EPA	United States Environmental Protection Agency
FAO	Food and Agricultural Organization of the United Nation
GaWC	Globalization and World City
GDP	Gross Domestic Product
LED	A light-emitting diode
RUAF	Resource Center for Urban Agriculture and Forestry

## Notes (and figures sources)

- Indoor forms are often defined as controlled environmental agriculture (CEA).
- Till 1949, 0.132 m<sup>2</sup> greening area / capita
- In 1982, 0.46 m<sup>2</sup> greening area / capita
- 3 m<sup>2</sup>/capita in 2000
- 12.51 m<sup>2</sup>/capita in 2008
- <http://www.clspl.org.cn/xinwenliebiao/difangzhuanlan/5469.html>
- Taking real estate market as an example: from 1999 to 2016, the price has raised from 3176 RMB/m<sup>2</sup> to 39923 RMB/m<sup>2</sup> – over 12 times growth during 17 years. However, generally citizens can only get 70-year living right.

- 8 Two farms in Manhattan: one located underground of a restaurant; the other in a high-rise in a cooking school
- 9 “36% above the national average in a recent year” (Pearce, 2004)
- 10 Trees cannot be planted indoor easily.
- 11 <https://www.brooklyngrangefarm.com/about-brooklyn-grange-1/>
- 12 Some data come from: <http://lhrs.sh.gov.cn/warehouse/upload/ck/images/20130107110523250.jpg>
- 13 [https://www.researchgate.net/figure/261718487\\_fig1\\_New-York-City-Green-Infrastructure-Green-infrastructure-includes-city-parks-green](https://www.researchgate.net/figure/261718487_fig1_New-York-City-Green-Infrastructure-Green-infrastructure-includes-city-parks-green)
- 14 <http://www.shgtj.gov.cn/xxgk/ghjh/201503/W020160125402251538384.jpg>
- 15 [http://img2.jiemian.com/101/original/20170317/148971172021110300\\_a580xH.jpg](http://img2.jiemian.com/101/original/20170317/148971172021110300_a580xH.jpg)
- 16 [http://lhrs.sh.gov.cn/sites/wuzhangai\\_lhrs/neirong.aspx?ctgid=3a222e8f-e1e5-4737-8697-41de8c789e31&infid=fd3b1ff2-eb2b-426b-888e-659f11176c9e](http://lhrs.sh.gov.cn/sites/wuzhangai_lhrs/neirong.aspx?ctgid=3a222e8f-e1e5-4737-8697-41de8c789e31&infid=fd3b1ff2-eb2b-426b-888e-659f11176c9e)
- 17 <https://www.nycgovparks.org/about/history/timeline/reinventing-parks>

## References

- Branas, C. C., Cheney, R. A., MacDonald, J. M., Tam, V. W., Jackson, T. D., & Have, T. R. T. (2011). A Difference-in-Differences Analysis of Health, Safety, and Greening Vacant Urban Space.
- Liu, B., Wen, Q., & Liu, S. (2007). Planning Analysis and Optimization Strategies of Shanghai Green Space System. *Urban Planning Forum*, 4, 108-112.
- Pearce, D. (2004). The Self-Sufficiency Standard for the City of New York, 2004. Retrieved from
- Smith, A. F. (2010). The Food and Drink of New York from 1624 to 1898. In A. Hauck-Lawson & J. Deutsch (Eds.), *Gastropolis - Food & New York City* (pp. 34-49). New York: Columbia University Press.
- Urban Design Lab. (2012). The Potential of Urban Agriculture in New York City - Growing Capacity, Food Security and Green Infrastructure. Retrieved from Zhang, L., Li, J., & Fu, L. (2008). Layout of Urban Green System: Characteristics and Trend.
-



**Research Centre Agroecology, Water and Resilience**

Ryton Organic Gardens

Wolston Lane

Ryton on Dunsmore

Coventry

CV8 3LG

**T: +44 (0) 24 7765 7688**

 @CoventryCAWR